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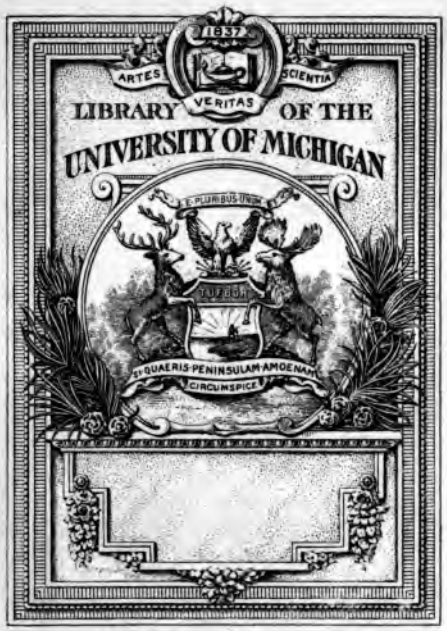
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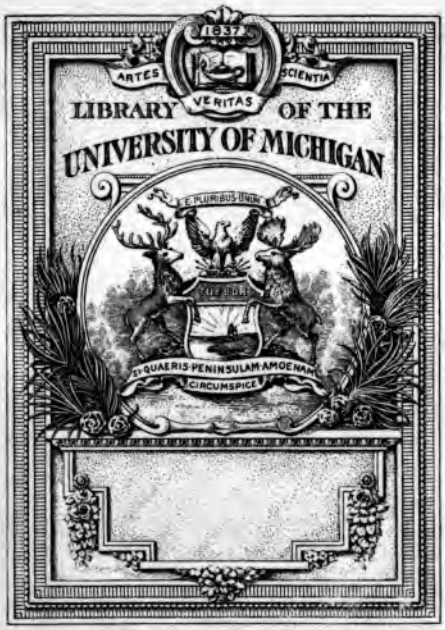
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MODERN INDUSTRIALISM

AN OUTLINE OF THE INDUSTRIAL ORGANIZATION AS SEEN IN THE HISTORY, INDUSTRY, AND PROBLEMS OF ENGLAND, THE UNITED STATES, AND GERMANY

BY

FRANK L. McVEY, PH. D.

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ILLUSTRATED

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1904

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THIS BOOK

IS DEDICATED TO

ARTHUR TWINING HADLEY, LL. D.

PRESIDENT OF YALE UNIVERSITY

WHOSE TEACHING AND WRITINGS HAVE BEEN

A CONSTANT SOURCE OF INSPIRATION

TO THE AUTHOR

137920

PREFACE

It would have been a difficult task to write the history of Modern Industrialism in a work of five or six volumes. It is a still bolder undertaking to attempt it within the pages of a single book. Believing firmly in the necessity of a clear understanding of what our complicated industrial society means, I have attempted neither a work of many volumes nor a compact history of modern industry, but have endeavored to show in its essentials only what that history has been in three countries, how complicated industry is in the machinery of production, exchange and distribution, and finally what problems arise from the very nature of the complicated organization with which states are forced to deal. To facilitate this treatment the book is divided into the three parts: History, Industry, and Administration.

It is still further my belief that in our present industrial society are to be found all the essentials of the future state. If a people know what these are, to what purpose they may be utilized, how strong and how weak fundamental principles of organization are, they may look with greater confidence to the future of the industrial state. As a people, the inhabitants of the United States are confronted by more serious problems than the people of Great Britain or Germany. Our very institutions, our democ-

racy, free land, and great resources make them more difficult of solution. The great corporation, powerful trade union, extensive railroads, and vast distributive system complicate the problems still more. The state is involved, is, in fact, compelled to take some attitude toward these problems. Shall it interfere only, or shall it regulate, control or own? These are questions which the citizen must answer in the near future. It is his to know, and if the present book brings him to a larger understanding, my purpose has been accomplished.

In the writing I have resorted for material to magazine, periodical, newspaper, book, reports and observation; in fact, to anything that would furnish facts about the changing and shifting, yet growing, industrial organization. That some errors should creep into a book dealing with so great a subject was inevitable, but I have endeavored to guard against them by verification whenever possible.

To Professor E. A. Ross of the University of Nebraska I am indebted for many suggestions and corrections. His kindness in reading the proofs has resulted in greater accuracy of statements at many points. From my colleagues, Professors West and Schaper, I have received occasional help and much encouragement. To Professors Appleby and Van Barnevelt of the University of Minnesota School of Mines and Mr. W. B. Chamberlain of the Minneapolis Journal, I am under obligation for some of the photographs used in Part I, Chapter I, Part II, Chapters I, III.

FRANK L. MCVEY.

UNIVERSITY OF MINNESOTA,
August 20, 1904.

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PART I

HISTORY

CHAPTER I

A SURVEY

THE year 1776 stands in the books of history as famous in achievement; in it the Declaration of Independence was written and the "Wealth of Nations" published. But it likewise marks the line between the old and the new in the system of production. With it begin the manufacture by machine, the decline of cottage industry, the awakening of democracy and the dawn of Modern Industrialism.

The last term designates that stage of society in which men, machines and capital are massed and marshaled to the task of creating goods. In its completed form such a society is national in type, highly specialized in skill, wonderful in resources, and powerful in inventions. Great ships, well organized railroads, banks, commercial houses and systems of credit make possible the supplementary work of transportation, and the distribution of wealth in the industrial society.

To arrive at such a result is the task of years and centuries. The nation that has thrown aside the relics of a feudal time, emancipated its labor, revised its trade laws, invented machinery, organized a factory system, opened its natural resources, built railroads, constructed steam-vessels and amassed capital is within the system of modern industrialism. Production in such a nation is no longer for village and countryside, but for the mar-

kets of the world. The raw material that remained undisturbed in hill and mountain is dragged in boat and train to the sea, where, in manufactured form, it is sent in giant vessels to foreign lands. With progress like this come many problems—no longer the comparatively simple ones of an agricultural society, but the problems complicated by domestic difficulties and new world elements. The solution of these, as well as the standing and power of the completed national organization, depends upon the mutual adjustment of the several factors in production.

Many elements enter a national organization, political and industrial. There must be a thoroughly amalgamated people possessing a common language, and residing in a definite territory. Their institutions must have become well established and capable through their agency of maintaining law and order. In such a society industry and commerce reach a high degree of efficiency. The territory of the nation is covered with railroads and equipped with the modern conveniences for carrying on commerce. The political organization is well established and fully evolved, having passed the period of experiment. As examples of this statement England, after the Reform Bill of 1832,* the United States since the Civil War, and Germany after the Franco-Prussian contest may be cited. Each nation since the events mentioned has pushed its industrial organization with amazing rapidity, opened its natural resources, and producing for a world's market at the same time attempts to meet the industrial problems that arise with the aid of the political organization.

So long as one nation alone had reached the stage of a completed organization there was no great world contest, but with two or three such national societies a

*The bill of 1832 was followed by the more comprehensive acts of 1867 1868, 1884–5 and 1888. The first bill was the beginning of modern democratic England.

conflict, national in character, was sure to take place. To-day, three nations have made the greatest advance toward the completed form—England, the United States and Germany.

England entered the nineteenth century with much of the old clinging to her; her land tenure, cottage system, navigation laws, corn laws, were all relics of former conditions. These her people have bravely cast aside for freedom of trade, a factory system, and a new land tenure. On the other hand, the "Fatherland" has clung to the old and reared on a foundation hoary with age a structure of modern industrialism. In this land remain an agriculture, a land tenure, and a division of labor, ancient in character; but within a limited number of industries the spirit of modern production has controlled to such a degree, that Germany stands prominently among the leaders of industry. The United States began her career as a modern producing nation almost without restriction. No ancient usage bound her people; in but few instances did feudal dues and old land tenures exist. Nature alone, in her heavy-handed bounty, imposed burdens. Men were free to do that which instinct, will and reason dictated. But this freedom brought with it intensified problems of an economic and political nature. It is, then, to these three—England, the United States and Germany —that we may look for the most extended forms of modern industrialism.

The wonderful century in which these results were accomplished, is marked by definite stages of progress. By the opening of the century, Wyatt had created his roller spinner, Kay his fly shuttle, Paul the carding machine, Hargreave the spinning jenny, Arkwright the spinning frame, Crompton the mule, Cartwright the power loom, Whitney the cotton gin, and Watt the steam engine. The very foundation of a factory system was thus in the sole possession of England. The Napoleonic

wars served to strengthen England's monopoly on the textile machines. As these wars closed Stephenson added to her wealth of inventions another great device—the locomotive. Steam was thus used in the double capacity of driver and motive power.

In 1819 the first steamship, the forerunner of mighty ocean carriers, crossed the Atlantic. By this new means of communication the English market was extended and

The Savannah.

British supremacy threatened. Nineteen years later Morse stretched a wire between Washington and Baltimore and sent a message over it; the half century had just begun when Cyrus Field succeeded in uniting Europe and America by a similar method. The steamship and cable had made the world smaller.

Sir Henry Bessemer announced in August, 1856, in a paper before the British Association the now famous process of making steel; it required three years of costly experiment to solve finally the problem. Soon after the Suez Canal was completed and a new and shorter

route to India established, through which were to pass in endless succession the steam-vessels built of Bessemer steel. In England, America, and Germany railroads were building, hastened by the new process of steel-making. The completion of a Pacific road in 1869, again shortened world distances. By these achievements America and other lands were enabled to bring their vast resources to ocean ports and finally to exchange them for foreign products. But before this was possible in the fullest sense of the word it was necessary for them to complete their internal organization.

The political history of the century is suggestive of national movement. England had acquired India and established an orderly civil government there, France had a foothold in Asia, the United States was in possession of a part of her western territory, Germany remained within her national confines, while Russia scarcely knew of the great wealth of Siberia. In 1842, after the opium war, Hong-Kong passed into the hands of the English, and Chinese exclusiveness was broken down; two years later, largely under the influence of this war, a few Chinese ports were opened to trade. The second half of the century had just begun when Commodore Perry knocked at the doors of Japan, asking admission for American trade. The Orient thus rudely awakened from its slumber remained comparatively unnoticed until nearly the close of the century. The world must pass through an American Civil War, an Austrian-Prussian conflict, a Franco-Prussian struggle, and the pseudo-adjustment of the Eastern question before it was ready to think about commercial relations in the Far East.

The war for the maintenance of the Union in the United States continued for five years, bringing with it numerous changes. Through the influences of this war new cotton-producing nations were brought into the circle of international competition and a slave people

freed from bondage. In Germany, from 1866 to 1870, every centralizing influence was at work in the creation of the German Empire. The quarrel over Alsace and Lorraine resulted in the humiliation of France and the transfer of a billion dollars to the coffers of the Kaiser. Then followed a period of industrial growth, and by the close of the century, Germany stood forth, a giant ready for commercial competition.

From the beginning of the century England had, with her iron and coal, a marked advantage over her competitors. During the last ten years, however, this ascendency has been challenged by the rapid development of the United States and Germany on these lines. At the close of the century the United States with her Minnesota ranges, Michigan and Alabama mines, produced 13,838,634 tons of pig iron, Great Britain 9,454,204, Germany 8,029,305 and France 2,567,388. As the organization of industry rests upon a foundation of iron and steel the nation that possesses these and can get her resources to the sea must inevitably stand first in the industrial order.

The century has likewise been marked by extensive discoveries of gold, which have greatly influenced the industrial organization from time to time. The constantly widening commerce and production demanded enlarged facilities of exchange, which were met by increasing supplies of gold, and an active organization of banking concerns international in character. The great discoveries of gold in Australia and California resulted in an increase in the annual output from $13,000,000 in the decade from 1831–1840 to $130,000,000 in the ten-year period from 1851 to 1860. During the few years since 1892 the gold supply of the world has been increased by over one billion of dollars in value, and even this has been seemingly ineffective in relieving the pressure upon the money supply. Nevertheless the nation possessed of resources

of gold has materially strengthened its position as a commercial land. Increased national production could not have taken place, even with the growth of the gold supply, if it had not been for the vast savings and credits held in the banks of the world. It is estimated that the negotiable securities of the world are equal to the sum of $85,000,000,000, while in the postal banks of Europe and England and the savings banks of France, Great Britain, Germany and America are credits vast beyond imagination. These accumulated proceeds of a century's toil invested in machines and tools yield a return in manufactured products which the national owners are striving to sell in neutral markets.

In a hundred years the organization of industry has undergone a complete change. The small producer is superseded by the captain of industry, and the small company has given way to the trust, sometimes so colossal as to stupefy the imagination and blur the outlook. The equipment of producing nations with economic tools has been pushed to the fullest extent in the last twenty years. These have been used systematically and purposefully, as is witnessed by the vast production of commodities at the present time. During the last fifty years numberless inventions have facilitated production; among these we may find more commonly reapers, mowers, seeders, steam-plows and other agricultural machinery; the Bessemer steel process, the T-rail, the cable, telegraph and telephone; photograph, electro-plating, printing-press; the steam-hammer, rapid-firing guns, India-rubber in its industrial uses, and the steam-shovel and drill; sewing-machines; electric lighting, electric motors, microphones, spectroscopes, polariscopes; the compound steam-engine; new process of refining sugar; hydraulic levers; cranes; elevators; iron and steam-ships, cheap fuel, by-products, aniline dyes and the type-writer.*

* Wells' Recent Economic Changes, p. 65.

A hundred years ago business was limited in area, now it is world-wide; then orders were given in person or by stage-coach post, now they are sent by letter, telephone, telegraph, or cable. In the days of the eighteenth century, because of the lack of transportation and communication facilities, a scarcity of commodities was possible in one region while an abundance existed in another. By the men who reached a market at the time of a scarcity, enormous profits were reaped, an impossibility to-day in that the cable and telegraph have let the world know the condition long before the scarcity is actual. As a consequence the character of trade has wholly changed, the basis of profits having become skill in management rather than mere difference in place.

With machine production as their agent, civilized nations have made wonderful strides in their commerce. In the course of sixty years, from 1840 to 1900, England increased her commerce from $853,000,000 to $3,965,000,000. Measured in percentages the growth was 350; during the same time her population grew one-half. In 1840 Germany, a nation of struggling and wrangling states, possessed a commerce estimated at $263,000,000; by the close of the century it had reached the enormous figure of $2,416,000,000, an increase of 690 per cent. The same year saw France with the second largest commerce, amounting to $288,400,000. Somewhat behind in the race in 1900, France enjoyed still a foreign trade of $1,566,000,000, a gain of 424 per cent. In 1840 dormant Russia's commerce amounted to $124,000,000; now, awakening and stirred by new economic forces, the Russian commerce has reached $643,000,000. The United States has made the largest gains; in 1840 her commerce was $223,200,000 in amount, whereas the year 1900 registered $2,243,000,000 of imports and exports.

Great Britain was the pioneer in this machine pro-

duction and in consequence possessed at first a monopoly. Knowledge of industry, of machines, and of commercial organization could not always remain in the control of one people. The nations once followers are now rivals. In the strife for economic supremacy England reached her present position as a mercantile nation after three-quarters of a century of struggle and experiment. Unhampered by the accumulated materials of rejected knowledge, greatly assisted by recent contributions to the theory of machine production, and profiting by the experience of England, the younger industrial nations have advanced rapidly into new fields, until, as can be seen by the statistics of commerce, they threaten the supremacy of the pioneer country.

The figures given in the preceding paragraphs are by no means indicative of the extent of machine production; for within the boundaries of each land are factories, foundries and forges engaged in the making of commodities for the home market. Only scattered and meager statistics can be secured in support of even this statement, but such as they are they furnish sufficient evidence of a wide-spread development of industry. France had, in 1899, establishments numbering 88,968 engaged in manufacturing, while her railroads carried freight amounting to 126,830,000 tons. Germany in 1898 produced $238,000,000 worth of minerals and manufactured among other commodities $2,503,000,000 of iron products. Russia, agricultural nation as she is, had in 1897 30,029 establishments which produced values of 2,839,144 rubles. Products to the value of $13,004,400,143 were reported as manufactured by 512,254 establishments in the United States in 1900. The mineral wealth produced in 1898 by the people of the United Kingdom was $377,000,000, and the textile industry created values to the amount of $859,000,000.*

* The Statesman's Year Book, 1901.

It is estimated that to-day the more important nations are putting forth mechanical power in the field of production equal to 320,116,000,000 foot-tons daily.* The same remarkable development may be noted in the very large increase of spindles in operation at the present time. In the year 1900, the various nations were operating 101,790,000 spindles in the production of cotton goods. Some further conception of the vast growth that has taken place may be gained from the statistics of production of various commodities. The nations of the world manufactured in 1900, something over forty million tons of pig iron, and twenty-eight million tons of steel. Coal, an essential in the workings of the factory system, was mined to the extent of 724,000,000 tons in different countries; 2,700,000,000 pounds of wool, nearly three times what it was in 1860, were produced in the last year of the century; while wheat to the amount of 2,800,000,000 of bushels was grown and harvested in the year 1900. These figures, meager as they are, indicate in no small degree the extent and power of the producing capacity of the manufacturing nations at the present time.

The most notable thing in the rapid development of modern industrialism is the growth of the United States, where the methods of the new industrialism prevail more than in any other land. In the year 1898, the United States sold for the first time more domestic merchandise in foreign lands than any other nation; her balance of trade since then has been remarkable in the wide difference between manufactured goods exported and imported. All the figures go to prove that the internal organization of the country has been completed and that the vast resources are now furnishing the materials for her manufactured products. The corn, wheat, cattle, iron, and cotton that formerly went to foreign shores, are exported

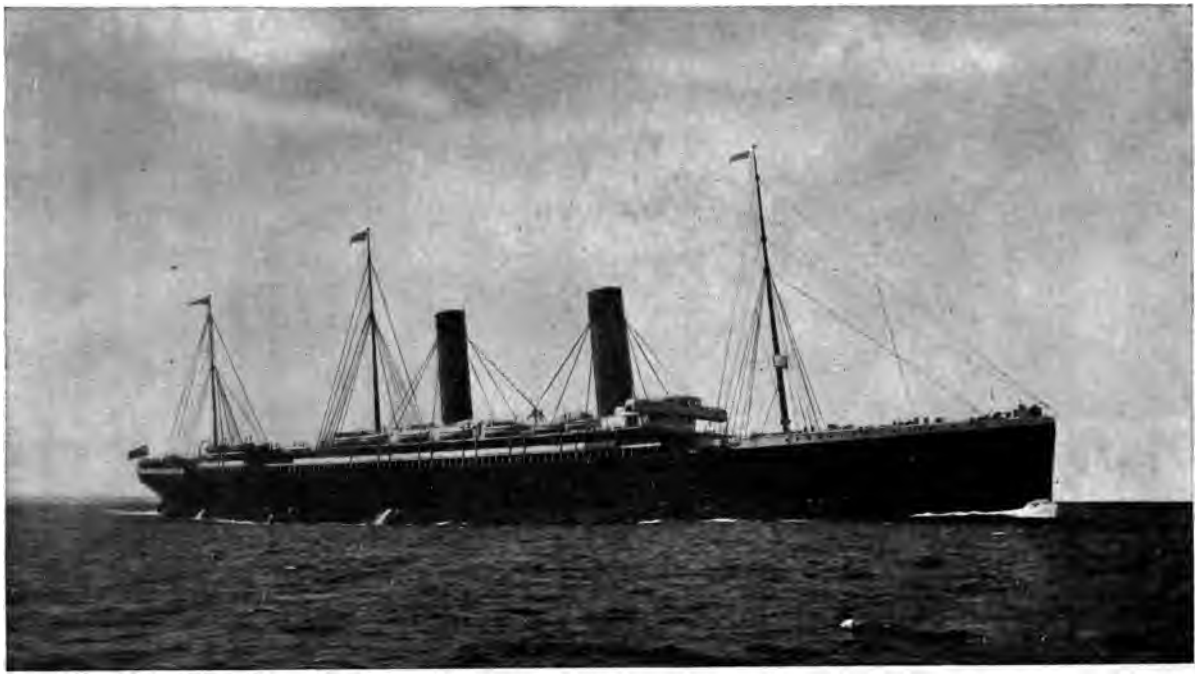
* Mulhall, North American Review, June, 1895.

as flour, dressed beef, hams, steel tools and machinery and cotton fabrics.

From three sources we may form a conception of the internal commerce of the United States. The railroads, in 1900, transported 510,079,200 tons of freight; through the canals at the Sault there passed in the same year, 25,643,073 tons, while on the canals of New York were carried 3,354,941 tons. To these figures should be added the coastwise and river carriage of freight, for which there are no figures to be had. The census of 1900 shows that a capital of $9,187,434,799 had produced, from a raw material valued at something over seven billions, a product estimated as being $13,004,000,000. The wealth of the nation was estimated in 1900 as equal to $94,300,000,000, owned by a population numbering 76,303,387. The freight carriage, manufactures and the total wealth of the nation convey some idea of the vastness of the industrial organism.

As we turn to the modern facilities for the conduct of business, the tremendous strides during the past hundred years are apparent. The fourteen-ton Rocket of Stephenson's is a mere pigmy beside the giant locomotives of to-day. The steamer Savannah, earliest of her kind, could be easily carried in the hold of the Oceanic, and so the comparison may be continued into every department of business.

Recently an English shipping company built a vessel of 20,000 tons gross, another one, within two years, placed in its sailing schedule a steamship of 17,274 gross tons, capable of carrying 7,000 tons of freight, while a somewhat smaller vessel carries 8,651 tons, which, translated into freight-cars, means 215 cars of 40 tons each to give a full cargo. With the widening of the world's market, the national shipping has, in most instances, grown rapidly. England, in 1900, possessed 14,372,000 tons, the United States 4,864,238 (including barges and canal-



The Oceanic.

boats), Germany 2,720,000 and France 1,401,000.* Among the smaller nations, Japan and Norway are making the most progress. In addition to the shipping the world has been equipping itself with railroads to aid in the task of transportation; the latter carry raw materials to the mills and transport the finished product to the waiting vessels on the seaboard. The year 1900 saw 466,939 miles of railroad in the various countries of the globe, which carried, in 1897, over three billion passengers and one billion tons of freight.† The world has likewise equipped itself with a cable system of 166,290 miles, over which were sent, in 1898, 312,000,000 messages. As the struggle for commercial advantage increases in intensity, nations will increasingly endeavor to secure the best labor-saving machinery that genius can produce.

It was less than three-quarters of a century ago that Howe struggled with the sewing-machine, which has now found its way into thousands of homes in many lands, and into factory after factory where a dynamo or engine drives a shaft to which the machines are attached. In the business of newspaper making, the Hoe presses print thousands of copies in an hour, thus facilitating the spread of information in every land. Germany and England now seek in the United States the lathes, steel-cutting machinery and agricultural implements for use at home or in their colonies. The principle noted in the competition of individuals with each other in the field of production is now to be seen in the conflict of nations. That principle may be reduced to this—the elimination of the unnecessary and the acceptance of any improvement likely to reduce cost.

The movement from good to better methods of production has been accompanied, in fact accelerated, by or-

* Journal of Political Economy, December, 1900.
† World Almanac, 1901, p. 231.

ganization. Organization that began in the factory has extended to the industry and in a certain sense to the business of a nation. The factory began in the time of competition, organization of a plant gave the owner an advantage over his competitor which lasted as long as it made possible the cheapest product. Little by little the methods of the individual have extended to the industry, and the machines, once the monopoly of one, have come to be the common property of all. So long as an industry supplied the home market, the national organization was not likely to be fully developed, but when a surplus of products resulted and a foreign market entered then a further organization was necessary.

The increasing capital and savings, noted in another place, seeking investment in all lands, forced production for a territory beyond the national limits. This accumulation of capital, the increased production of machinery, better organization of the factory and greater division of labor have produced the great competition of nations with each other in the world's market. Such a competition, severe and excessive in character, could not take place without a complete reorganization of industry. In centers where population and raw materials were at hand, factories of producing companies have been erected. The owners of them, in order to eliminate duplication and excessive cost of management, have constructed a minute organization which will make it possible to take advantage of every division of labor and of every facility of production. As the times and character of industry demanded, the partnership, joint-stock company, corporation and trust have appeared, in the order named, as the dominating features of industrial organization. In the opinion of Lord Rosebery a trust organization of industry gives a nation a great advantage over other nations in the commercial contest. Certain it is that with proper organization the aggregation of capital, machinery and labor should

give peculiar advantages in the field of production; but of these more will be said in a later chapter.

Accompanying this movement toward concentration may be seen a growing dependency of trades upon one another. Specialized industries have come to be the order of the day, until entire factories are given over to the production of one kind and quality of goods. Thus the industries of the nations are more closely allied and grouped than in the past, these groups being materially affected by the location of the raw material and the facilities of transportation to the market. As the dominant natural conditions in a country come to be better known, a wider distribution of production takes place, resulting in an expansion of competition and increased localization and specialization of industry.

Viewing the situation as it exists to-day, nations appear to exert every power and influence to secure the ascendency in the world's market. As was indicated, the nation once great as a manufacturer is now rivaled by others who have steadily but surely pushed her in the market. It may be only a matter of time until each nation in its turn reaches the highest point and then slowly and gradually gives way to another. Certainly, industry as now organized points to just such a succession, but as the principle of specialization and location is fully understood and acted upon, there may be a mutual development in different ways and along different lines. The trade a nation will then carry on will depend upon the peculiar qualities and advantages she possesses over other lands.

It will take, however, a long time for nations to realize that each one may have a specialized industry best suited to its resources. Until this time comes we must look for continued political and industrial strife in the attempts made to secure control of the world's market. This form of market represents the fullest expansion due

Modern newspaper printing and folding machinery.

to modern machinery of transport and exchange, the railway, steamship, newspaper, telegraph, and the system of credit built up and maintained by the assistance of these material agents. The world's market, therefore, must be for non-perishable commodities, such as steel rails, cloth, wheat, cereal foods and machinery. The larger this market becomes the greater the economy of factory labor, and the larger the demand for increased investments of capital. On the other hand, it is virtually impossible to realize the economies in wider production unless a large market is opened to the producer. As machines have developed and factories grown the unit cost of manufacturing has been lowered, enlarging the extent of the market with each improvement in production. But with the widening extent of the world's market has gone the supposition that it can be controlled by ownership of territory, which has diverted public attention to foreign questions of diplomacy. As a matter of fact, although modern industrialism has brought foreign problems prominently into the field of discussion, there are, nevertheless, far more serious domestic questions to be settled which will, in the end, determine the question as to whether a nation can remain a competitor in the world's market.

CHAPTER II

INDUSTRIAL CHANGES IN ENGLAND SINCE 1760

It was the industrial revolution of the last part of the eighteenth century that changed the "Merrie England" of the Georges to the factory land of Victoria. The tools of the handicraftsman, long the evidence of individual production, were displaced by the machine system of the capitalist during this period of change. The England of hand-production was to become the land of machines; from isolated and loose industrial organization she was to pass to a highly organized, compact industrial nation.

The contrast between the old and the new England is so great that a brief statement of the conditions existing before the revolution will bring the transition more clearly to view. In the England of the eighteenth century industry presented the same general features as in the Middle Ages. Primitive and unsystematic methods of agriculture prevailed, men complained that one-half the land was waste and quarrels arose continually over the rights of the people on the common land. There was no rotation of crops, the agriculture was exceedingly unscientific and unproductive for the amount of work put upon it. Arthur Young, in commenting upon the agriculture of the time, says, "the spring crops are beneath contempt. Much time is lost in travel to the different strips and there are perpetual quarrels over the rights to pasture." But in 1770, the same writer says, "in the

last ten years there have been more improvements and good sense displayed in the walk of agriculture than in one hundred preceding years."

The population in 1769 was estimated at eight and one-half million people; 60 per cent of those were engaged in agriculture and manufacturing. Employment was as a general thing regular, nominal wages were low but their purchasing power fairly good. In the manufacturing field the woolen industry was the principal one, a fact probably due to the great advantage England had as a wool-raising country. Even as late as 1770 the exports of woolen goods amounted to about one-third the entire exports of the nation. In annual value the woolen manufacture of the kingdom was estimated at £600,000. Of this about one-third was exported in the year 1764.

Next to the woolen industry in importance was the production of iron. In 1737 there were fifty-nine furnaces in eighteen different counties producing 17,350 tons of iron annually. This did not suffice to meet the demands of the English manufacturers, for some 20,000 tons were imported from abroad. The cotton industry was very insignificant, although in 1760 there were forty thousand people engaged in it. In the hardware trade it is said that fifty thousand people were employed in 1727, although the business was confined largely to Birmingham and Sheffield. Here and there, in the different parts of the country, where trade centers in the manufactury of hosiery. Several silk mills existed at the time, and some linen was manufactured at various places in the country. Banking was in its infancy and little used in the development of trade.

The external commerce of the nation though not large was growing rapidly. In 1792 the exports amounted to £24,905,200 and the imports in the same year reached the sum of £19,659,358.

Despite this seemingly impressive array of industries

the mechanical arts were in a decidedly backward state. The inventions of the industrial revolution had not yet been made a part of the industrial system. Such factories as existed were driven by water power, while the principal method of manufacture was carried on by a modified system of the cottage industry. Even as late as 1750 in the well-organized woolen trade the cottage system was used. It is said in the Nottingham hosiery trade there were fifty manufacturers known as "putters out" who employed twelve hundred frames. In the nail business the same method was followed. The iron merchants gave out rod iron which was made into nails in the cottages of the people. The tendency was in the direction of bringing the looms into the town, though at this time few looms were found under the same roof. This, however, was the nearest approach to a factory system before the introduction of the inventions.

The markets of the time were limited by poor communication and lack of transportation facilities. The industries were largely local and there was no competition to force them into better methods, so that the division of labor was about the same as one hundred years before. Scattered through the country were small master manufacturers, who, having land and capital of their own, combined farming with manufacturing. Unprogressive as the times were in the business of production, wealth was more equally distributed and the relation between workingman and employer much closer than under the factory system. In the houses of the master mechanics, artisan, apprentice and master ate at the same table, while on the farms the laborer and the farmer were on an equal footing. The landlords of the day were only moderately wealthy, and the society may be regarded as unprogressive, tenacious of old customs and satisfied with its means and methods of production.

Three groups of causes may, on Toynbee's authority, be

designated as the reasons for the movement that took place during the period called the "industrial revolution." The first of these was agrarian, the second manufacturing, and the third general. The agriculture of England was inferior to that of the leading European states, and but little real progress had been made in the cultivation of the soil; beginning, however, with 1760 and continuing until the first quarter of the nineteenth century a marked improvement was seen in this direction.

(1) The changes consisted chiefly in the acceptance of the new agriculture as it was practised in Holland, and this somewhat slow recognition of better methods was accompanied by the destruction of the common-field system of cultivation and the substitution for it of rotation of crops and a three-field system. The enclosure of the common land formerly allowed to lie waste was a third element, while a fourth one is found in the consolidation of small farms and the introduction of capital into the business of agriculture.

The causes for the lack of progress in English agriculture may be summarized in the following: waste land, open field farming, the absence of stock leases, the ignorance of the farmers, the acceptance of traditional practices, the lack of markets, and the difficulties of communication. With the development of markets produced under the influence of the manufacturing part of the revolution, agriculture received a stimulus that forced it into new methods and better means of cultivation.

(2) The course of the revolution in the field of manufacture is seen in the development of inventions, in the use of coal and iron, the establishment of factories, the accumulation of capital, and the organization of capital and labor. Four periods are noticed in the growth of mechanical devices.* The first, lasting from 1730 to 1770,

* The author is indebted to Hobson's Evolution of Modern Capitalism for this classification.

may be called an experimental period. In this period we have Wyatt's woolen spinner, Kay's flying shuttle, Paul's carding machine, Hargreave's spinning jenny, and Arkwright's improved spinning frame.

The second period extends from 1770 to 1792, and is one in which the mechanical inventions are more thoroughly developed. It includes the machines most necessary for the growth of the cotton industry, such as Crompton's spinning mule, then patents for carding and drawing wool and cotton, and ten years later Cartwright's power loom. There still was wanting something powerful enough to drive the machinery that had thus far been produced, and so long as people were compelled to rely upon the water-wheel for driving force industry was limited to factories far removed from the market and not particularly well qualified for the production of cotton and woolen goods.

From 1792 to 1830 we have the third period, in which is seen the application of steam power to the mechanical devices of the second period, and at the same time the invention of three machines, necessary to the fullest growth of the weaving industry. Whitney's cotton gin appeared in 1794 and revolutionized the harvesting of cotton, making it easy to supply the hitherto insatiable demand. Herrick's dressing-machine was developed in 1813 and in 1830 the throstle, an improvement upon Arkwright's water-frame, made a smooth yarn and a thread strong enough for the warp of heavy goods.

In the fourth period, extending from 1830 on to the present, the dominating features are in the invention of the locomotive, and the application of steam to marine transportation; in this period, too, many improvements were made in the earlier machines.

In reviewing these several periods the sequence in the development is apparent. The first period was character-

Early English factory near Preston, Lancashire.

ized by improvements in the means and methods of spinning and weaving. In the second period it was necessary to apply the mechanical devices so as to secure some other motive power than that of man. So long as water-power alone was relied upon the factory system could not be generally developed. It remained, therefore, for the steam-engine, which was brought forth in the third period, to stimulate the growth of the factory system beyond the conception of its founders. The application of steam-power to mechanical devices for production of goods extended the market, necessitating better means of transportation, which were provided in the fourth period through the invention of the locomotive and the application of steam to marine transportation.

In addition to inventions, iron and coal were necessary before the manufacturing part of the revolution could be brought to its conclusion. The iron was wanted to produce machines, the coal to drive them, and without these England could not, particularly in the Napoleonic wars, have secured the advantages which she did in this revolution. England, however, had both coal and ore, and with these as a basis she was able to manufacture iron, steel, and machines.

(3) But England, with her unorganized means of transportation, was in a position where she could not have taken advantage of her facilities without some change in her transportation system. Under the heavy traffic of the new manufacture the roads which had sufficed during the Middle Ages broke down and failed to provide easy means of transporting goods. This condition resulted in the use of the pack-horse until the canal relieved the pressure upon the traffic. From 1770 on for thirty years canals were industriously extended throughout the manufacturing parts of England. The use of coal as a fuel for making steam was now possible and the factories situated on streams in remote parts of the country were brought

through the distribution of coal and goods to the centers of population where a working force could be had.

The complete change in the organization of English society from land to persons two centuries before tended to hasten the revolution. Until the great class struggle of the sixteenth century men were landed men, connected with the soil as lord, vassal or serf. The guild and feudal systems were broken up, leaving men without a status, a thing highly essential in medieval society. The laborer too was left without his feudal lord, and there was, as a result, much drifting from place to place. The continual movement from country to city and from city to country tended to break up the old domestic system of industry. As a result of the movements of this period men were without land connections unless in the capacity of landlords or tenants, and, as a consequence, England was confronted with a problem—the care of persons seeking a place in the organization and unable to find one. To alleviate the consequent suffering and deprivation in part due to the changes wrought in her social organization prior to the revolution mentioned above, she entered upon a more extended system of poor relief.

The strict enforcement of the poor laws, prior to the middle of the eighteenth century, brought a reaction, which from 1750 to 1834 resulted in a laxness of administration that created many evils. During the period just mentioned, the system cut at the roots of independence and self-help, fostered suspicion, heartlessness and vice, paralyzed industry and lowered the moral and material standard of living in the country.* It hastened, it may well be believed, by the rapid decline of the domestic method of production, the coming of the factory system, which, when established, was maintained by a child-apprentice system and the laborers without place. Many

* Article, Administration of Poor Law, Palgrave, Dictionary of Political Economy.

attempts were made to prevent the movement of the poor from parish to parish, which was a block in the way of the economic progress of the working class, upon whom England was depending for the manning of her factories.

Another influence may be mentioned among the general causes of the revolution—an influence due to the loss of the American colonies and the general conclusion that a sale-market does not necessarily demand ownership of it. This thought, when fully recognized by the English, caused them to throw aside their mercantile notions and stimulated their foreign trade with all parts of the world. They were to be the great producing nation, the one that should enter the marts of the world and through their factory system supply the products needed by the people of many nations. This conception, once fully recognized, had much to do with the rapid commercial advance of England.

The industrial revolution, though covering a period of but forty years, nevertheless produced many lasting changes. The system of industry was overturned and general social conditions greatly altered. Labor had become less necessary than capital, factory towns had displaced villages and small industrial centers and the social classes were more numerous and less in touch than before the revolution. Farmer and laborer, and capitalist and laborer, had become separated by social barriers. There were great fluctuations in employment, supplies and prices. The product of the country was larger and of much better quality and men were on the whole more regularly employed, but wages fluctuated greatly in purchasing power.

During the period from 1776 to 1815 the population of the country had grown very rapidly. The factory system drew many people to the manufacturing centers. These had become great cities, and under the political system then prevailing had no representative in Parliament.

This condition, strange and unacceptable, continued to exist until the granting of the franchise and the breaking down of the rotten borough system. It was a necessary process in the development of a democratic England.

Not the least among the changes that had taken place during the revolution was the transformation in the realm of ideas. Up to the last quarter of a century men had talked much of government regulation, but new conceptions of liberty had been presented by various schools of philosophy that cast aside the old notion and put in its place the theory that governments should control as little as possible. Thus the individual was left to take care of himself when he entered any industrial field where he might care to work; but he was expected to rely upon himself for his success and in case of failure bear his own losses. This was called "industrial liberty."

The complete system of economic law, worked out by Adam Smith, Ricardo and others was accepted as furnishing a sufficient regulation of things economic. Enlightened self-interest was the keystone to the industrial arch. Undoubtedly the factory system made rapid progress because of the absence of government interference. Men were at liberty to employ any kind of labor, of any age, and this was done as the dreadful story of English labor testifies. Under these conditions the profits of the factory-owners grew apace. England was prospering, but the condition of the mass of people was worse instead of better, and she was yet to learn that a government can shield the weaker ones of society during a transition period, and that it is often necessary for the state to curb and direct the growth of institutions likely to affect its own existence.

The industrial revolution, with its vast changes, made it possible for England to bear the burden of the Napoleonic wars. Grief-stricken and beggared Europe was compelled to come to the Englishman for supplies, but

peace brought its punishments. In 1790 the population was eight millions; at the close of the wars there were fifteen millions of people in Great Britain. High prices prevailed, great discontent followed and misery ruled. England had not yet adapted herself to the new methods of production, her new organization was incomplete, her old one with its yeomanry was gone. Peace had cut down her foreign trade and left her factories idle.

The British farming system at the opening of the century included landlords, tenants and laborers, for the former copy-holders and cottagers were reduced to wage-earners by the process of farm consolidation. By 1817 some forty thousand farms had been united with larger ones; naturally the displacement of so many cottagers, commoners and open-field cultivators accentuated the crisis, and for twenty years after the Napoleonic wars an agricultural depression prevailed. Nevertheless it remained for the capitalistic landlords to make possible the recovery of agriculture from its prolonged misery during the years 1818–36. When the later date was reached the old system of cultivation had disappeared.

During the thirty years after the battle of Waterloo England made progress slowly; her population rose to twenty-four millions, her national wealth increased, the burden of taxation lessened, but her factory system was still unorganized and its evils at their very worst. Labor, encouraged by the repeal of the Settlement and Wages Acts, the modification of the corn laws and the elimination of the conspiracy laws from the statute books, formed local trade-unions which in the latter part of the period took on the organization of national unions. It was a time of readjustment, an effort to make the old fit the new, and where this was not possible the old was destroyed by the new. Time was required to make these changes and progress was slow but sure. England did not have the advantage of an established educational system

to help her in the transition and the light of the future industrial organization came but slowly.

By 1836 scientific methods, intensive cultivation and improved drainage had revived agriculture, and as a result continuous prosperity was enjoyed until 1876, when the competition of new and fertile soils in foreign lands disturbed the prosperity of the English farmer. The interests of England demanded, from the manufacturers' point of view, a cheaper and more regular food-supply, in support of which movement the Anti-Corn League was formed in 1838. The change was fought by the agriculturist to the bitter end, the battle between the landed and manufacturing interests continuing until the final repeal of the corn laws. Peel's bill of 1842 was a great step toward the end as well as toward free trade, the policy of Great Britain. Famine in Ireland finished the argument and the landed interests were left without the protection of the corn laws. The stimulus of the corn laws to agriculture, now lost through their repeal, was more than made up by the tremendous development of trade and population, and the expansion of commerce owing to the introduction of steam for transit and motive power, while improved machinery, fertilizers, and economies in farming made agriculture more profitable.

By 1846 England had her modern industrial organization fairly well in hand; the laboring classes were greatly superior to the proletariat of the first part of the century; a higher standard of living prevailed among them; machinery was accepted as a necessary part of production and the opposition to its use had almost passed away. The banking and currency system also was completely changed and for the better by the Bank Act of 1844. The old policies of national trade had been abandoned for the wider one of freedom. During this time, too, a great many legislative reforms had been introduced, such as the Reform Bill, the factory acts, the modification

of the corn laws and the change in the Poor Laws, in 1834. This legislation materially affected for the better the English workman, giving him shorter hours and bet-

ter sanitary conditions in the factory. But despite this favorable legislation little material progress was made, and wages showed but a slight upward tendency, though pauperism had materially diminished.

This continuous improvement in the details of machine construction, in the skill of workers and in factory organization, in automatic machinery and in speed, resulted in a finer class of goods and a marked increase in the foreign trade of the nation. In the first part of the century the hand-looms gave way slowly to the machines driven by steam. The gradual introduction of the power-loom is seen in the figures of 1815 when there were 3,000 power-looms, 1820 when there were 12,000 and in 1834 when the number had reached 100,000, although even then there were 250,000 hand-looms at work in the kingdom. (The power-loom was capable of producing six to eight times the product of a hand-machine.) It is more than a coincidence that these same figures represent the proportionate increase of the foreign trade of England in the thirty-six years between 1815 and 1851.

England's supremacy has rested in no small degree upon her early development of the iron industries, which made it possible to get her industrial organization well in hand before other nations had entered upon the creation of railroads and iron vessels. At the beginning of the century she had better command of her mineral resources than any other land, for in 1806 there were 161 furnaces, producing 243,800 tons of pig iron, which in 1852 had increased to 655 furnaces, producing 2,700,000 tons of pig iron. This development of the iron industry stimulated ship-building and the construction of railroads. But more than this, freedom of trade had thrown wide open the gates of commerce and given England a great opportunity. In the two and a half decades from 1840 to 1865 England made rapid progress although interrupted in her forward movement by Chartism, the Crimean War, the crisis of 1854, and the Civil War in the United States. Nevertheless the good harvests of 1842–43 were followed by large railroad undertakings, while

the discovery of gold in Australia and California tended to offset these depressing influences.

In the field of legislation the nation was actively engaged in eliminating the old usages and restrictions. Parliament passed the Companies Incorporation Act in 1862 and in the same year gave to the friendly societies the right to an independent legal existence. In the field of trade-unionism the organizations formed in 1851 the Amalgamated Union, the progress of which was materially aided by the greater leisure brought to the laboring classes by the growth in national wealth. It was not in fact until the forties that the laborers began to reap the fruits of the legislation of 1833–34. They had in the meantime made the important discovery that they could do a great deal by their own efforts, a fact that goes a long way toward explaining the progress of the trade-union in the later decades of the century.

The necessity of railroads in England was never so marked as in America or even in Europe, for many rivers extending from the interior to the sea afforded excellent opportunity for the transportation of her commodities; nevertheless, owing to the early development of the iron and steel industries she was a pioneer in railroad construction. Road locomotives, clumsy and unsatisfactory machines, had been invented as early as 1769, while in 1801 a horse-power road was constructed, called the Surrey Iron Railroad. The freight traffic of the country had increased so rapidly under the factory system that the canals, no longer able to handle the business, put the rates up to an unreasonable point. This stimulated a few capitalists to the point of building the Liverpool and Manchester Railroad. In the year previous occurred the famous trial of the Rocket, Novelty and Sanspareil at Runhill. The Stephenson engine maintained a speed of twenty-nine miles an hour, which was regarded as a marked triumph. The future possibilities of the locomotive thus

demonstrated as a motive power, the demand for capital for railroad building was greatly increased.

But little notion of the relations of the railroads of a country to each other or of the part they were to play in the industrial organization existed in England during the early days of railroad construction. There was no idea of a connected system of railroads, and such confusion arose from the many gauges employed in the building that

The "Rocket."

Parliament was compelled to establish a standard gauge. Though at first there was much opposition in Parliament to railroads, as the years approached the middle of the century the opposition took a milder form and Parliament passed a series of constructive laws such as the Railway Regulation Act (1840), in which the safety of the public was carefully provided for, the General Corporation Act, the Cheap Trains Act (1844), and the Railway Clauses Act (1845). The commission appointed under the third of these acts provided a bill which made possible the owner-

ship of the railroads after a period of twenty-one years. At the end of the time, 1865, the Royal Commission appointed to consider the whole question of government ownership reported adversely to the plan, but favored cheap fares, which are now in vogue in England.

In 1843, the last Southampton stage-coach ended its journeys and the railroad was victor over coach and canal. Still, railroad building was interrupted again and again. The panic of 1837 held men back from such a new venture as railroads. The wild speculation of 1845 brought on almost immediately a reaction of such violence that railroad building proceeded for the next ten years in a quiet and orderly manner. The problems of construction were solved to such a degree that the interest was shifted from them to questions of operation.

There was, however, dissatisfaction with the regulation of railroads and much complaint was made by shippers. The last general act of Parliament on railway matters is the act of 1873 by which three persons were to be appointed to deal with railroad disputes; one to be a lawyer, a second a railroad man, and a third a business man. This commission had final decision in matters of fact, questions of law could be appealed to the courts. Parliament, expecting to solve the difficulties as they came up, never made the commission permanent, but renewed it from year to year. The expedient has been but partially satisfactory; the railroads, however, have continued subordinated in every respect to Parliament enactment. Satisfied that general legislation can no longer reach the difficulties constantly arising Parliament has been content since 1873 to legislate specifically for special problems.

The opening of the Suez Canal drove from the ocean the fast clipper-built vessels which had given to England her long-acknowledged command of the seas. As early as 1838 a steaming record of fifteen days had been made between England and New York. Well equipped with

ship-yards and iron industries the English entered at once into steam navigation, and about the year 1840 were founded the well-known companies of the Cunard, P. and O., Royal Mail and the Inman. These were followed later by many others, giving to England at once an outlet for her commodities and direct communication with foreign nations.

The year 1870 saw England with a thoroughly equipped and well-knit industrial organization. The interior parts of the island were connected by rail and canal with her seaports, and she was in fact getting her resources down to the sea and transporting them in manufactured form to foreign lands in her own shipping. To her then came freight, ocean insurance, and profits without the competition of foreign carriers. Her resources were well developed and mining methods fairly understood. In the business of production the factory system had completely superseded the older methods of the days prior to the industrial revolution. Improved machines and buildings, united in an organized system superior at the time and for many years after to that of other nations, were creating vast amounts of commodities for exchange with other lands. The English likewise had settled for themselves by the year 1870 the financial questions involved in banking and money; to them the Bank of England stood for solidity, while their money system based upon gold monometalism was regarded as the best possible for a commercial nation engaged in foreign trade. And well has their faith been founded, for merchants in foreign lands, knowing that bills of exchange on English firms were valued at so much the world over, have made London their banker.

It was necessary, however, that such faith in English money should be accompanied by other deeds of trade freedom. In June, 1823, the old navigation laws, long restrictive of trade, were practically repealed. The ship-

owners declared that they would be ruined, but in twenty years the tonnage of English shipping had increased forty per cent—another evidence of the wisdom of casting away the old.

Early in her history the sons of England in vessels on distant seas sought the shores of other lands. Driven from home, some by religious intolerance, some by economic conditions, some animated by the spirit of adventure, they built up in these lands miniature Englands, loyal to the old. Thus was begun England's colonial system. Until a century ago the mother country regarded the colonies as absolute possessions with no rights of their own, but the same colonies which once were looked upon as dependencies are now grown states, already possessed of much political importance. To England colonies are necessary, for she does not produce food enough for more than half her numbers; this surplus of population will strengthen English power abroad if it can be induced to go to the sources of the food supply. This source in the past has been America, but the English colonies throughout the world are entering more and more the home market and providing the mother country with food stuffs.

England's colonial empire forms a great organization, touching with its network half the world and giving British capital and commerce unusual opportunities for investment under the guardianship of her army and navy.* The system is constructed on the main highways of commerce and in consequence grows with world development, but after all the vital essence of this great colonial organization lies in common descent, speech, traditions, common citizenship and social and commercial interests.

Side by side with the development of freedom in the English colonies has grown the spirit of democracy at home. In 1832 partial franchise was granted to the English workman, and from time to time this privilege has

*Cotton and Payne, Colonies and Dependencies, p. 132.

been extended, giving him larger and more important interests in national legislation. As first established this bill gave the middle class a great deal of power which they were using to advance their own interests. So long as the so-called lower class had vague notions and radical ideas it was feared that it would be unwise to entrust them with the franchise. The grievances of the poor at the time were great and England was not ready to democratize her institutions in order to relieve the conditions. The futile mutterings of Chartism had passed and England settled into a fairly contented state of mind. A second Reform Bill was passed in 1867 and a third in 1884–'85, granting an almost universal suffrage to the workers of Great Britain. By these changes Parliament came to be the representative of the population instead of the aristocracy. With the political ascent of the workers the former ruling class lost much of its power, with the result that England is governed by the people and in a large measure for the people. Developing but gradually, this change did not bring with it the immense problems found in America, where the power of the democracy has at times attempted to regulate economic development in the interest of the democracy.

After struggling for three-quarters of a century the trade-unions in 1875 secured the passage of a law that defined their rights and powers and gave such organizations an established position. With the franchise and their newly acquired rights the trade-unions have made rapid progress in numbers, wealth and influence. As factors in production they bring a mighty power to bear on the determination of any question. Nevertheless, in the face of such growth schemes of profit-sharing and cooperation have been presented in the hope of modifying industrial conditions. The trade-unions are regarded more and more by employers as a necessary part of the industrial organization. The development of the franchise and the

growth of the trade-union and industrial organizations have been accompanied by an increased government activity. The post-office was early in government control and with it there has been connected from time to time the telegraph, telephone, parcels post and savings bank. In England the tendency seems to be toward the regulation and ownership of some of the great branches of industry, quite in contrast, so far as results go, with the course of events in America.

It has been only within the last few years that the English have attempted to form combinations, after the example of many industries in the United States. There were in earlier days many local combinations to keep up prices, but no active movement toward the concentration of industry until recent years. The form adopted by these new trade organizations is quite like that now existing in the United States. The English people have by no means the same fear of these organizations as exists in America, but hail them as the means of meeting foreign competition and maintaining English commercial power.

The opening of the twentieth century finds England with a completed industrial organization. For many generations she has been getting her resources to the sea; she has a merchant fleet of 14,372,900 tons and a foreign commerce of nearly four billions of dollars. She has cast aside the corn laws of the first part of the century, amended her navigation acts, organized a factory system, developed her labor organizations, created a trust system well under the control of the government, granted the franchise to her workers, and with it all is comparatively free from the harassing problems found in America, due to the too rapid development of both plutocracy and industry.

Nevertheless after fifty years of free trade she turns, incited by the marvelous progress of her rivals, to the consideration of a protective system. Confronted by a food

problem and what seems to be a stationary trade she looks to a closely knit empire for a remedy. As in earlier days she is in a period whose results threaten her policy, fiscal and imperial. No longer mistress, she fears the loss of her share of trade. In the progress of the century her organization may have suffered by its very successes.

CHAPTER III

INDUSTRIAL EVOLUTION OF AMERICA

ENGLAND entered the industrial revolution with well-developed political and social institutions; the people of America began their industrial evolution with a newly formed constitution, with a national debt, and with small conception of the vast changes that were to take place in their country. The revolution in England extends from the year 1776 to 1815; in America it is a period of successive waves of human life in which the savage is superseded by the hunter, the hunter by the trader, the trader by the rancher, the rancher by the farmer and the latter by the manufacturer with his accompanying organization of city and factory system. In time the period extends a hundred years after the adoption of the constitution; the movement has been at times quick, at others slow, in the development of trade, commerce, transportation and manufacture.

Cultivated farms, towns and cities were the possessions of England when the great industrial changes began; in America the people were compelled to conquer forests, to make roads and bridges, and to subdue nature. The story of English growth is the story of an organized society gradually casting aside the old and accepting the new, while the history of America is the story of free land, its settlement, and the advancement toward the west of American civilization—a story, indeed, of reversion to primitive conditions on a continually advancing fron-

tier line, where the social development of the last settlement was restarted and replanted. The Americans were an expanding people demanding in some cases new institutions and in others the alteration of those brought to American shores by the English. Thus social development was continually beginning over again on the frontier; it was productive of excessive individualism, creating as a result a "free land democracy," intolerant of restraint and lax of government, and leading in the long run to difficult problems which have been obliterated or entirely avoided in countries where democracy was an evolution instead of an expansion.*

In America the movement was largely that of evolution of industry and in consequence plenty of time was given the laborer to adjust himself to the new conditions. There was no landed aristocracy in the United States. Land was free to every man, who could undertake its cultivation if he wished, and employ such capital and labor as he possessed. Every farmer was his own landlord and his own laborer. All classes were merged into one great class, a condition due to the fact that no one would be a laborer and work for wages if he could get land of his own to cultivate. In consequence there was a social uniformity and equality prevailing in America in strong contrast to that existing in England. As the laborer had the option of working with his own tools he was always able to secure the results of his labor. He occupied then the position of capitalist, manufacturer and manager.†

The second census found 5,308,418 people residing in what was called the United States of America. During

* Professor Turner, in his Significance of the Frontier in American History, has pointed out more clearly than anyone else the evolution of the frontier in the United States, and to him the author is indebted for many valuable suggestions and ideas.

† This statement holds true in the face of indentured servants and contract labor.

that same year England had a population of 15,000,000* and France 27,000,000. In America one-fifth of the population was negroes, leaving less than 1,000,000 able-bodied males in the great struggle for the conquest of nature. Forests covered every portion of the country, while two-thirds of the people resided within fifty miles of the seaboard and a vast mountain-range separated the eastern and western settlements.† Communication between the cities and towns was exceedingly slow, requiring many weeks to pass by land and a long time to go by sea from port to port.

Up to the time of the Revolutionary War the people of the United States supplied themselves almost entirely by what is known as the domestic system of manufacture. Spinning, weaving, production of boots and shoes and of food products were carried on inside of the home. Here and there, it is true, there were small factories engaged in the manufacture of cloth, or the making of some iron ware, but the capital of the country was largely absorbed in shipping and agriculture. The products of the fishing industry found ready and rapid sale in the Catholic countries across the sea. Lumber was taken from the vast forests along the coasts and sent abroad in considerable amounts. The whole valuation of the property of the United States in the year 1800 was placed at $1,800,000,000, or $418 to each free white. The wages averaged about one dollar per day and family wealth amounted to about $2,000. Taxes were little or nothing and life was simple.† The development of industry in the country at the time was retarded in no small degree by the scarcity of free labor in the colonies, for the work of agriculture was carried on largely by indentured servants and slaves. The free land, too, affected the labor-market and made wages relatively high.

*Including Ireland.

†Henry Adams; History of the United States, vol. i, p. 9.

Still it is not to be understood that there was no manufacturing at the time, for many efforts were made to encourage the business of producing commodities. Washington, in a letter to the Marquis de Lafayette,* said: "Though I would not force the introduction of manufactures by extravagant encouragements, and to the prejudice of agriculture, yet I conceive much might be done in the way of women, children and others, without taking one really necessary hand from tilling the earth. Certain it is, great savings are already made in many articles of apparel, furniture and consumption. Equally certain it is, that no diminution in agriculture has taken place at a time when greater and more substantial improvements in manufacturing were making than ever before were known in America. In Pennsylvania they have attended particularly to the fabrication of cotton cloths, hats and all articles in leather. In Massachusetts there are established factories of duck, cordage, glass, and several other extensive and useful branches. The number of shoes made in one town, and nails in another, is incredible. In that State and Connecticut are also factories of superfine and other broadcloths. I have been writing to our friend General Knox this day to procure me homespun broadcloth of the Hartford fabric to make a suit of clothes for myself. I hope it will not be a great while before it will be unfashionable for gentlemen to appear in any other dress. I use no porter or cheese in my family but such as is made in America."

Again, in a letter to Thomas Jefferson, the first President says: † "Exclusive of these things, the greatest and most important objects of internal concern which at present occupy the attention of the public mind, are manufactures and inland navigation. Many successful efforts

* Washington's Works, vol. ix, pp. 64–65.
† Washington's Works, vol. ix, pp. 469–470.

in fabrics of different kinds are every day made. Those composed of cotton, I think, will be of most immediate and extensive utility. Mr. Milne, an English gentleman who has been many years introducing those manufactures in France and whose father is now carrying them on under the protection of government, at the royal Chateau of Muette in Passy, has been at my house this week, and is of the opinion that they may be prosecuted in America to greater advantage than in France or England. He has been almost two years in Georgia stimulating and instructing the planters in the production of cotton. In that State and South Carolina it is said the cotton may be made of most excellent quality and in such abundant quantities as to prove a more profitable species of agriculture than any other crop. The increase of that new material, and the introduction of the late improved machines to abridge labor, must be of almost infinite consequence to the prosperity of the United States.

"A desire of encouraging whatever is useful and economical seems now generally to prevail. Several capital artists in different branches have lately arrived in this country. A factory of glass is established upon a large scale on Monocacy River near Fredericktown in Maryland. I am informed it will this year produce glass of various kinds, nearly to the amount of £10,000 value. This factory will be essentially beneficial by having the navigation of the Potomac completely opened. But the total benefits of that navigation will not be confined to narrower limits than the extent of the whole western territory of the United States."

Undoubtedly the fertility of the soil retarded the growth of manufacturing for the reason that it produced an immediate and effective return beyond what manufacturing could do at the time. There were attempts here and there, as has been indicated in the letters of Washington, to produce commodities of one kind or an-

other. These, by the year 1790, had reached a considerable amount, although the early manufactures were not particularly successful. In the effort of ship-building, however, the people of the United States made greater progress than in any other industry. Vessels were built at points along the eastern coast, particularly in New England. Cordage, cables, lumber and naval stores were produced in considerable quantities. Alexander Hamilton in his first report on the manufactures of the United States enumerated a large number of articles that were produced in the country at the time, and among these were fine leather goods, hardware, ships, machinery, manufactures of flax, hemp, cable, cordage, sail-cloth, twine, bricks, tiles, spirits and liquor, paper, fur and woolen hats, refined sugar, oils, soap, tinware, carriages, snuff and tobacco, starch, paints and gunpowder.

The attitude of England toward the colonies under the colonial system then existent, undoubtedly affected the manufacturing activity of the American people. The English laws during the colonial period took three forms: First, of navigation acts, based on the laws of 1651 and 1661 against the Dutch. Under these acts shipments from the colonies could only be made in English ships and the master and crew of each must be English. The object was to create a monopoly of the English colonial trade for the subjects of the crown. Under this act shipbuilding became the principal business of New England and undoubtedly it was greatly stimulated by the navigation laws of England, although it had the effect of retarding our manufacturers in every other line. The second group of acts involving the welfare of the colonies were those of the "Enumerated Articles." In the year 1660 Parliament forbade the exportation of enumerated goods to any country save England. Tobacco was the only article then exported by the Americans that came under this restriction. Rice and naval stores were added to the list

in 1706 and copper and beaver-skins in 1722. None of the staple articles, such as fish, vessels, timber and rum, were ever enumerated. These restrictions did not affect many persons, and the probabilities are that the Enumerated Articles Act of that year was not particularly disastrous to the American colonies. The manufacturing laws were undoubtedly more injurious to the Americans. In 1667 it was enacted that no wool nor woolen goods should be loaded on board of any vessel or carriage for export. The attempt was to absolutely prohibit and shut up manufacturing in this country for distant ports. In 1719 a resolution was passed to the effect that manufactures in America were likely to lead to the freedom of the colonies. Thirteen years later the exportation of woolen hats was forbidden and in 1750 it was declared that no steel furnaces should be erected in the colonies. As importation duties on bar iron were removed at that time, the prohibition of steel manufactures was balanced in some degree by this concession. In the Molasses Act of 1733 duties were laid on molasses to prevent its importation to America, but the English government never attempted to enforce it and after 1760 the entire mercantile policy was changed and an attempt was made to secure a levy from the colonies instead of relying upon import duties for funds. On the whole, it might be said that instead of an injury being done by these acts, a great deal of good resulted in the creation of trade and the stimulating of it by export bounties in the production of naval stores.*

After the separation of the colonies from the mother country the attitude of England was entirely changed; America understood at once that political and economic freedom were two different things, and that she should be compelled to adopt some system of encouragement if she wished to enlarge her manufacturing capacity. Eng-

* Ashley, Quarterly Journal of Economics, November, 1899.

land had already by this time (1790) developed textile machinery and the steam-engine, and she was determined that every effort should be made to prevent the exportation of any machinery to America. By the 21st George III, chapter xxxvii, it is provided "that any person who packed or put on board or caused to be brought to any place in order to be put on any vessel for exportation, any machinery, engine, tools, press, paper, utensil or implement, or any part thereof, which is now or is hereafter used in any part of the manufacture of woolen, linen, or silk manufacture of the kingdom or goods wherein wool, or goods wherein cotton, linen or silk are used, or any model or plan of such tools, press or implement, shall forfeit any such machine and all goods packed therewith and £200 and suffer imprisonment for one year." * A year later (1782) the law was still further extended and the penalty made £500. Acts were also passed preventing the emigration of artisans; and these laws, enforced with great vigilance, naturally placed serious obstacles in the way of establishing the factory system in America. To establish the factory in this country the people were compelled to resort to smuggling or to the invention of machinery. Both methods were followed until a very considerable knowledge of the manufacture of cotton goods was secured. Bounties were offered by the various States for the purpose of stimulating manufacture, and here and there in the different parts of the country small enterprises were established, but it remained for Samuel Slater, an Englishman, to establish in 1790, in the town of Pawtucket, R. I., what was the first complete factory in the United States. The plans of the machinery and the skill which Slater possessed gave a great stimulus to colonial manufacture. The invention of Eli Whitney in 1792, further contributed to this progress, so that at the close of 1810 Albert Gallatin,

* Wright, Factory System of the United States, Ninth Census.

Secretary of the Treasury, could say that there were 87 cotton factories in the United States, employing 80,000 spindles. The census for the same year estimated the manufactured product of the country at $198,613,474.

Beyond the Atlantic seaboard, at the eastern base of the Appalachians, and in the Ohio valley industry grew with the needs of the people. The trader made rapid advances toward the west, exchanging guns and goods with the Indians for furs and pelts and erecting a strong barrier against the next wave of pioneer and farmer. When these came they found Indians with arms, an obstacle in the way of civilization.* But the very obstacle bound the people of the West in a common interest and mutual protection, making it possible for them to hold their settlements until the establishment of army posts. The industries were for a long time domestic in character until the coming of the farmer and small producer.

The industries of the western settlements were the trade in furs and agriculture. The towns on the Mississippi were unusually well situated to carry on the fur trade, the river furnishing a way of transportation to the hunting territory and to the market, and as early as 1705 twenty thousand hides and skins were shipped from the Wabash Valley. At an early date the settlers in the Ohio Valley began to cultivate the soil, raising maize, vegetables and European fruit. That some commerce was carried on at the time is evinced by the shipment of six hundred barrels of flour from the Wabash to New Orleans in 1746. An eminent authority declares that 619,681 barrels of flour and 1,000,000 bushels of wheat together with large quantities of tobacco were sent to Europe in 1791.

Fishing and mining were early developed, although mining was largely retarded because of the lack of expert

* Turner, Significance of Frontier in American History.

knowledge in the locating of mines and their operation. Lumbering was the fourth extractive industry, and stimulated the manufacture of vessels. Then, too, considerable quantities of lumber were exported. The authority quoted above * says that in 1792, 65,846,024 feet of lumber, 80,813,357 shingles, 32,039,707 hoops and large amounts of pitch and tar were exported, which all points toward the natural development of the extractive industries after the opening of the new country.

The manufacturing stage began with the household industries. Men were compelled to produce their own clothing and many of their own utensils for use in their every-day life. Communication was so poor that it was impossible to sell any surplus that might be made, so that for a considerable time there was no large production of commodities in America. There followed a little later, as the struggle with nature was lightened, a larger production of household commodities for the market and a very considerable export trade was built up, based on household manufacture. But almost from the beginning the production of commodities by machinery was going on slowly here and there. Iron was discovered in Virginia in 1610. It is true that it was a sort of bog iron found in the marshes and ponds, but nevertheless iron. Some works were established in Massachusetts as early as 1648, and it is declared that in 1731 in New England there were 6 factories for manufacturing hollow ware and 19 forges for iron. By the middle of the latter half of the century many iron articles were manufactured. Later on iron was discovered in New York in 1775 and shipments made from the port of New York to the extent of 2,400 tons of pig iron and 750 tons of bar iron. In Pennsylvania iron had been discovered as early as 1685 and it was refined in 1692 and successfully used for manufacturing in 1716.

* Wright, Industrial Evolution of the United States, p. 73.

Still, up to 1800 the people of the United States were practically engaged in the same industries as the colonists. These industries were agriculture and the kindred occupations that are found in any society supporting itself by the cultivation of the soil. Everything that could be imported was brought to our shores in English vessels and paid for by agricultural products. Manufacturing was consequently limited to those things that could not be brought from abroad. In fact, America was at this time the great market for English goods, for the profitable markets of Europe were disturbed by a state of war which fixed attention upon American demands despite the laws passed to check an extended commerce with that nation.

A series of restrictive measures both at home and abroad, the war conditions existing in Europe, and the War of 1812, shut off the profitable trade of the previous years, but production at home was greatly stimulated, particularly that of articles formerly imported. After peace was declared England again flooded the American market with her pent-up goods, as she did in 1785, and for a time this monopolization of the market checked the growth of American manufactures. By the year 1818 the domestic industries had been almost entirely superseded by machinery. The introduction of a coke blast-furnace, puddling and rolling processes, recreated the iron industry by 1815. From this date on to 1850 great strides had been made in the organization of mills and in the adaptation of machinery to American conditions. This changing growth may be noted in the number of cotton factories in 1831, 1840 and 1850. In the first mentioned year there were 801, in the second 1,240, and in the third 1,074.

One influence of great importance in the development of the Ohio and Mississippi valleys thus far has been given but little attention in the pages of this chapter. Reference is made to the national land policy. A serious con-

troversy over the public domain embittered the States in their attitude toward each other for a number of years. In 1778 Maryland was the only State standing out against State ownership of the public domain. The Articles of Confederation fixed the western limits of the States in 1781 and three years later Virginia's proposal was accepted under six conditions by which the territory was turned over to the Federal Government. The conditions were, to lay out the areas in States, to develop in them a representative form of government, confirm the titles of the French settlers in the territory, reserve 150,000 acres for officers in the Revolutionary army, to make good north of the Ohio any deficiencies in land grants southeast of that river, and to dispose of the rest for the public good. The latter clause necessitated some plan for land sales and in 1785 a plan incorporating the present divisions of township and section was established. But little attention was paid to land sales during the establishment of the new government, and the matter dragged on until the appearance of the first territorial delegate in Congress. By 1800 there were 500,000 people living west of the Alleghanies. The defeat of the Indians by Wayne six years previous insured peace and increased the demands for land. Congress resolved upon land offices, the classification of the land and its sale by auction and private sale on long credit. It was the beginning of the American system and the opening of cheap lands to the poor man on easy terms.

Meantime a marvelous social betterment had taken place in the country. By the end of the first quarter of the nineteenth century there was a great increase in wealth and population and perhaps above all in the means of communication. Through the agency of this addition to the national equipment business had greatly expanded and many new opportunities opened to merchants. The successful operation of the Erie Canal and

the revolutionizing of business by the opening of new territory to producers and distributors created a demand for canals in other parts of the land. The enthusiasm for internal improvements immediately following this period was intensified by the demand of the pioneers on the frontier for the goods produced on the coast. To get these easily and without delay necessitated facilities for transportation, hence the pressure brought by the Middle West on Congress and legislatures to build canals and roads. The tariff history of the forties and fifties may be explained in much the same way. Protection at home was necessary in order that factories might be erected in the interior to provide for the wants of a people living on the frontier.*

Sectionalism of an economic character even at so early a date had made its appearance in the national history. The interests of the North and South were opposed. The South without manufacturing or internal trade interests objected to the tariff and the Federal internal improvements, while the cotton-gin and the textile inventions had stimulated the demands for cotton, making its cultivation the all-absorbing business of the South. In the thirty years from 1790 the annual export of this product had gone to 281,000,000 pounds valued at $35,000,000. The boundless fields of ore and coal were neglected, mechanical inventions were disregarded and the energies of the South confined to the raising of one plant and the trade for foreign merchandise. An immense trade between Great Britain and the South thus came into existence that stood in the way of a national exchange of products between the North and South and brought the latter to oppose anything that was likely to affect her relations with Great Britain.

While the North was establishing railroads and building factories, the South remained comparatively content

* Turner, Significance of the Frontier in American History.

with her one great industry and did not enter into the rapid economic development of the West. She failed to impress her organization upon the expanding and changing frontier so that the nation steadily grew more western and northern in type. In the end this was sure to create political dissension as a consequence of economic separation.

There were some fluctuations in the movement of industry prior to the Civil War period, due to the already mentioned War of 1812, the depression of 1837 and the crisis of 1857. Manufacturing before 1820 was well-nigh destroyed by the combined influences of the tariff of 1816, disordered currency, the hard times of 1819, and the great importations of English goods. Despite these interruptions the progress since 1830 was steady, and on the whole the influences at work were permanent. The shrewd practical sense of the American, drilled into him by the hard fight with nature, had equipped him for quick and ready acceptance of inventions and the application of machinery to production.

The decade from 1830–1840 witnessed the beginnings of vast changes in the economic organization. At the end of the decade there were 2,818 miles of railroad which were to double every five years until the Civil War; steamboats navigated the lakes and rivers; mechanical inventions were rapidly appearing; anthracite coal was found applicable to the creation of steam and great progress was made in the manufacture of agricultural machinery, stimulating the cultivation of the soil on a large scale. The nation was gradually passing from a rural to an urban population, the railroads extended the limits of habitable territory, the factories concentrated the people. Corporations made their appearance and both the simple industries and their management became more complicated in meeting the wider wants of a growing people. The equality of the earlier days was broken down

and a distinction between employer and employee began to appear, a forerunner of the days of the captain of industry. The simplicity and uniformity of life were superseded by incoming class distinctions and greater complexity of social organization.

The Civil War proved to be the great dividing line of the century, for the type of industry, labor organization, forms of transportation, and organization of capital differed greatly before and after that event. During the first half of the century comparatively slow progress had been made and, such as it was, was confined to the northeastern part of the country. The factory towns had sprung up in New England because capital, which, in the newer agricultural community, was difficult to secure, was provided by the seafaring population. Aided by this advantage and the good environment and water-power, manufactures thrived in New England, while an abundance of fuel in the West and Southwest and the introduction of steam caused the mechanical industries to spread gradually in those directions and gave in the end a much wider range of the arts. Despite the apparently threatening political complications of the thirty years prior to the war the period was one of remarkable economic activity. The telegraph and cable made their appearance in the forties, and agriculture, under the encouragement of numerous inventions, and many discoveries, made considerable progress, but nothing like the development under the liberal land policy of the government after the Civil War. In the decade just before the rebellion the wealth of the nation increased 120 per cent, the value of farms increased 103 per cent, manufactures 87 per cent, exports developed 171 per cent and the railway mileage increased 220 per cent. Just prior to the war a number of railroads reached the Mississippi, but the transportation problem was far from solution.

Despite this rapid growth and favorable showing, the

Industrial map of the United States redrawn from the Report of the U. S. Bureau of Statistics.

element needed was transportation. The roadways were poor, distances great, population scattered and markets largely local. It was therefore necessary to build roadways and railroads as quickly as possible, and this was the great task confronting the nation, for upon it depended the future manufacture, internal trade, and foreign commerce.

Glancing hastily at the development of transportation facilities in the United States there appear to be three general periods, each one having its special characteristics. The earliest was the construction of roadways, followed by canal-building and finally by railroad creation. The first two periods had come and gone by the time of the Civil War and were mutually related.

It was not until 1790 that the paths and roadways through forest and wood were superseded by the turnpike. So poor were the roads that Madison spent a week in going from New York to Boston by stage, while the cost of cartage of a cord of wood for a distance of twelve miles was three dollars. To overcome these difficulties various attempts were made. Mr. Gallatin, Secretary of the Treasury, in his report in 1807 recommended a system of improvements in roadways along the Atlantic seaboard to cost $3,000,000, but Congress failed to make the appropriation. A number of roads under State aid were built from the East to the West and late in the first quarter of the century the United States began the National Turnpike extending from the Potomac River to Vandalia. Behind the demand for roads was a clear conception of their necessity. The people of the Middle West recognized the necessity of outlets for their products, especially in the exchange of goods with the East. Plans were projected for roads connecting rivers, and canals leading from the rivers to the Great Lakes. Home companies were organized in the earlier part of the agitation but proved fearfully inadequate. The burden was then shifted,

whenever possible, to the State and Federal Governments. In the public lands the people found a treasury which, if accessible, would provide the funds for the improvements. To this, however, objection was made that the public lands were to be used for the payment of the public debt; nevertheless road-building and canal construction went on in a more or less unsatisfactory way until the coming of the railroad.

The first canal in the United States was built in 1750 in Orange County, New York; soon after this the feasibility of a canal between the Hudson River and Lake Erie was recognized, but nothing was done until the next century. Many short canals were constructed, especially in the Potomac Valley region, furnishing for a considerable time the means of transporting commodities; the freight charges were very high, amounting at times to one dollar and a half a ton-mile. Such charges, in the face of the fraction of a cent per ton-mile of to-day, are almost incredible; they were nevertheless much less than the road charges of that time. The growing importance of the Middle West brought more and more prominently before the people the necessity of a lake and Hudson River canal. The suggestion was made in the last quarter of the eighteenth century, but it required nearly fifty years before the Erie Canal was open for traffic in 1825. The prophecies of the canal advocates were by no means unfulfilled; almost at once there was a marked influence upon the commerce and trade in the State of New York, while at the same time the canal contributed measurably to the development of New York City. In 1826 the tolls were $762,000 and in 1853 reached the large sum of $3,000,000.

Two great systems of transportation, developed under different influences but for the same purpose, could not long exist without coming in conflict. The railroad originated as a mere feeder to the canals, but grew so rapidly

that by the middle of the century the two became serious competitors. The contest was first one of profits, and then as to whether the canal could pay expenses. By 1870, the canal was forced to take what the railroad would let it have. The canal failed at this time in the history of transportation because it could operate but seven months in the year and it was constantly affected by floods or lack of water. The railroad was the steadier means of carriage and as such succeeded. The United States has never had an adequate system of roadways and canals. This statement—true to-day—was still truer seventy-five years ago. The great distances, vast areas of land, wonderful resources, all demanded an adequate system of transportation. These conditions the railroad came nearer meeting than the canal or roadway. It was therefore at an opportune time that the railroad entered into the civilization of the United States. Loosely bound by commercial and political ties the railroad built up stronger affiliations than could be secured at the time through patriotism.

In the United States the railroad began as a local road, built largely by subscriptions and bonuses secured from the people living in the district through which it passed. The financial panic of 1837 materially checked railroad growth and very few improvements were made for a period of nearly ten years. The gold fever of 1848 stimulated the building of railroads in all parts of the country, but more particularly in the Middle West. The Rock Island Railroad reached the Mississippi in 1855, and it was just a little later than this that the United States Government enlarged the scheme of giving land grants to railroads. The first land grant was given to the Illinois Central in 1836. The Central Pacific received from the Government in 1862 $30,000,000 and a land grant of 23,000,000 acres. The Civil War checked the period of extension and it was not until 1869 that we find the rail-

roads building into the upper Mississippi Valley. Then came the crisis of 1873, which stopped railroad-building until 1879, when it was renewed, and during the next four years extensions were rapidly pushed in the Southwest and Rocky Mountain region. It is stated by authorities that in these two sections the increase in mileage was 126 per cent for the Mississippi Valley and 168 per cent for the Southwest and the Rocky Mountain regions.* By the middle of the century there was noticed a marked tendency toward consolidation. In 1853 the New York Central was organized as a sort of combination road consisting of ten local roads; in 1867 the New York Central and Hudson River roads were united and somewhat later the Lake Shore and Michigan Southern was added to the system; the Pennsylvania Railroad secured control of the Pittsburg, Fort Wayne and Chicago line in 1858, and about the same time the Baltimore and Ohio extended its line to Chicago. These are the most marked examples of consolidation in the middle of the century.

This development, making rapid progress in the North, was disturbed by the Civil War. At its close a new industrial era was at hand. One million citizens turned from military life to the work of industry. Previous to the war the North had felt the full influence of the gold discoveries in California and Australia, the growth of transportation and the immigration from Europe, but in the fifty years from 1810–1860 the South remained unmoved while the Middle West and Northwest developed. In the North the mechanical industries had thrived, concentrating population, while in the Southwest the population was scattered and capital was lacking. The Civil War changed these conditions; the cheap soils, cotton-gin, good markets and mobile labor stimulated the South to new activities and created there the nucleus of a manufacturing section.

* Hadley, Railroad Transportation, p. 38.

Eight years after the surrender of Lee, the railroad mileage of the United States had doubled; thirty thousand miles, in addition to the eighteen hundred miles of Pacific railway, were constructed from 1865 to 1873. Fertile territory was opened to agriculture by railroad extension, settlers rushed in, capital came from Europe, and the United States took high rank as an agricultural nation.

The evil days of the seventies found the United States undergoing rapid development. The disastrous panic of 1873, world-wide in area and aggravated in the United States by the suspension of specie payments from 1862–1879 and the excessive stock-watering, disturbed all industries and activities. The depression felt long before in the South had resulted in the formation of the Grange. which a few years later was to bear an important part in the settlement of transportation charges. In the mechanical industries, labor unions had been organized with, in one instance, a membership of one million. Promoters were especially daring in the field of transportation, wrecking railroads and engaging in wholesale stock-watering. The times were such as to evoke an especially bitter feeling against railroad corporations and in consequence there appeared a wide-spread desire to limit their power by legal means.

Reckless rivalries, ruinous borrowing and excessive extravagance were the ruling policy. Such a policy on the part of transportation lines was directly opposed to the liberal land grant homestead laws of the Government. Desirous of seeing the vast areas of rich land cultivated and settled, Congress had passed a series of laws throwing open the public domain to settlement. The railways, heavily indebted, were compelled to keep up rates while the farmer had moved too far west. Both stood in the way of the rapid completion of the national organization. It was seemingly necessary right there and then to thresh

out the matter. Action was begun by Grange legislation and drastic laws were passed against the railways, for their managers had, in the words of Charles Francis Adams, "got it in their heads that they were not bound to furnish equal facilities to all, and, indeed, that it was in the last degree absurd and unreasonable to expect them to do so!" The movement from this point was a necessary one. In the course of ten years it cleared the field of many questions and settled through courts of law the principles of legislation, while it laid the foundation for the Federal and State regulation seen a little later in the Interstate Commerce Commission and State railroad commissions.

Despite the controversy over railroad rates the settlement of western lands went steadily on and the railroad mileage increased rapidly during the eighties. Conditions during this decade were unsettled and disturbed. It was in fact a ten years of excessive competition, of lawless disregard of investors' rights, but a period nevertheless of invention and progress. The railroad problem was not solved, the national organism was not completed. The Pacific slope with its wealth and resources was a distant country, connected with the East by patriotism and one railroad line. The Northern Pacific, chartered in 1869, did not finally reach the western ocean until 1883; a year or two later the Southern Pacific and the Atlantic and Pacific railroads were built to the Pacific coast. Early in the next decade, 1893, the Great Northern was completed, and the territory of the United States was bound by rail and wire together in one organism well on its way toward its completion. By 1880 the old frontier line was broken and the day of the pioneer and Indian trader was passed. The unbroken line of pioneer settlement no longer existed, for here and there were isolated groups of people on the extreme edge of civilization.

The period of excessive competition was over, both in railroad and manufacturing industries. Railroads had fought and battled with each other, they had been reorganized at great expense and energy and were ready for agreement and consolidation. The same tendency was noticeable in the field of production; concerns that had struggled bravely for existence were ready and willing to combine. The progressive division of labor and rapid extension of commerce during this period, stimulated by the improvements in transportation, resulted in the removal of many industries, formerly domestic and agricultural, to the factory. Many trade conditions pointed to concentration of industry as the ultimate result. The decade begins and ends with vast combinations of capital; at first speculative in character, later on tending more to justify themselves as productive agencies.

Much of this development had taken place behind tariff walls. Free from harassing foreign competition capital was diverted into all sorts of industries and labor was employed without much regard to the national organization or the future world's market. The exports of the United States steadily increased, reaching the enormous figure of $1,460,462,806 at the close of the century. Her people, however, little recognized their place in the markets of the world; they were in fact by no means sure of the national industrial organization. A merchant marine was not a part of the national equipment, but the railroads had already reached the stage of community of interest and speculation was rife as to the future control of the Oriental trade. Despite the beneficial influences of the tariff in a few instances, it held in check for many years the solution of the money question. So long as the United States was not interested in world markets it did not make so much difference about her money system, but once in the world's struggle the necessity was great indeed for a standard money. The reasons actually given

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In the field of labor organizations were growing stronger and strikes less frequent. Some severe contests had taken place between organized capital and labor, and the interests of both as well as those of the public demanded arbitration of disputes. This feature of labor contests seemed fairly established at the close of the century. From the point of view of national organization the unity of interests of the two principal agents of production was a great advantage to the nation that possessed such a condition. It meant the saving of millions of dollars in property, wages and products and an advance over any other nation less favorably situated. Through the agency of the trade-union much has been done to better the condition of the toiler in home and work-shop. Seconded by intelligent employers, the movement for betterment in producing conditions has tended materially toward the advancement of national interest in the world's market. Free from excessive militarism and favored by a superb school system, the workers of the nation have been able to devote their time and attention to the creation of products without the burdens of heavy taxation. This has been and will be a great advantage to America in the trade conflicts of the twentieth century.

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to apply principles of free competition with a minimum of government interference in a new country. The lack of legal restraint may account for some of the history of the seventies. More and more as the century grew older efforts were made to hold in check the rapidly advancing forces of industry. In the railroads we have the most typical example of American organization and business methods and it was to them that the States were first forced to turn their attention. Massachusetts as early as 1869 formed a commission to regulate the affairs of railroads, and, without power, this commission, by reports and publicity of accounts, did much to better the railroad situation in that State. Its example was followed in other parts of the country, but the State commissions found their jurisdiction limited by the lack of control over interstate commerce. This led to the formation of a commission by that name in 1887, but after many years of effort the Interstate Commerce Commission is unable to see any great progress in the work and the railroads are still unregulated in the business of transportation. In 1890 the Anti-Trust Act was passed by Congress for the purpose of controlling combinations, but the attempts to enforce it have been almost without success. The various States have followed the example of the Federal Government, but all of the legislation has been directed toward the destruction of combinations as the harborers of monopoly. The legislation has been instinctive instead of scientific. The railroads continue to cut rates and the trusts attempt to enlarge their monopolies. From the point of view of national organization both railroad and combination are needed, but to render their best service they must be shorn of their evils.

On this point a recent writer* well says: "To the country that shall at an early date unite in this way collective prosperity with internal harmony, there is offered

* J. B. Clark, Control of Trusts, p. 82.

the position of economic leadership. It will have over other countries the same advantage which a man has over other men when he precedes them in the use of efficient machinery, gaining large profits for himself and forcing his rivals to follow in his footsteps, in order to save themselves from being crowded out of the field. It is not merely because he has the machine, but because he has it before others get it, that he reaps a return in profit and power. The country that shall utilize the power of the trust for good, while curbing its power for evil, will have as its reward national profit and a position of leadership among nations." The United States has the power, the organization and the equipment, but before her lies the problem of securing harmony.

At the close of the nineteenth century the United States had virtually completed her national organization. Railroads extended from ocean to ocean, telephone and telegraph were strung from one end of the land to the other, raw materials were brought to the sea, gigantic manufacturing plants, the acme of organization, produced vast quantities of goods for home and foreign consumption. She had gone through the throes of a money war, her banks were fairly established, her people settled and at work in all parts of the land. Unencumbered by old customs or a military system, progress had been rapid—so rapid indeed that new problems of industrial control were more imminent in the United States than in other lands. In the land of democracy the problem of industrial regulation was still to be solved.

CHAPTER IV

THE RISE OF GERMANY

DESPITE notions to the contrary Germany is not a new-comer into the family of nations. For hundreds of years she has exerted a great power in the politics of Europe and previous to the nineteenth century occupied at times an honorable place in the world's trade. As a unified national force and as a great world state her influence in mundane affairs dates from the origin of the present Empire.

Retarded by political disturbances, the jealousies of many petty States, and the encroachments of enemies upon German soil, Germany left her industries undeveloped and devoted her energies to political problems of so serious a nature that time and skill were required for their solution. Political unity was necessary before her national industrial organization could be completed. To accomplish this the slow process of history, the consolidating influences of successful wars and diplomacy of an unusual order were necessary. It was after such movements that a land divided into so many principalities was united and began the organization of its industrial forces.

England and the United States, isolated by geographical position, were freed from many problems that confronted Germany. In them the industrial changes that led to the substitution of a factory system for the old domestic forms of industry were the result of individual

initiative. Governments had encouraged but little and often retarded by unwise laws the work of industrial advancement, and so the individual was allowed to find his way in the new organization without restriction or much limitation by the State. In these States have thus come the gigantic problems that arise when the initiative of the individual has built up a system of industry that threatens the power of the State. In them political unity came as a result of economic forces, while in Germany the nation was born before the modern industrial organism was begun. With a highly centralized government knowing well what was desired, Germany entered at once upon her remarkable career. The industrial organization in America and England has been from the bottom upward, while in the German Empire the reverse has been true.

The German State has taken the initiative, organized, directed and stimulated, and its final reward is the position now occupied by the German Empire in the world of politics and industry.

Within the confines of the German Empire to-day live 56,000,000 people largely engaged in manufacturing and mercantile pursuits. During the nineteenth century this people has passed from an agricultural to an industrial nation. The year 1800 saw eighty per cent of the population agricultural, to-day but thirty per cent are so engaged, nevertheless crop acreage has increased and great improvements in agriculture have been introduced.

At the time of the Napoleonic period industrial production was practically in the hands of the artisan class, which was organized in guilds of some strength. Through the medium of law a wider economic freedom was gained by breaking the power of the guilds, but custom and regulation so bound the productive interest of Germany that it was not until the end of the sixties that complete industrial freedom was secured in a majority of the German States.

The appearance of the railway and its complete organization heralded the coming of concentration in the manufactures of Germany. To-day there is no field of importance that the hand-worker can claim for his own, for the competition of the factory has penetrated into every industry in which he is engaged. As a consequence of this eliminating process the artisan has moved toward the country and smaller towns, endeavoring to meet the newer conditions by adopting, in so far as he can, the methods of the factory. Although the pressure of the newer industry upon the hand-worker and the domestic system has been great, nevertheless the two have in a measure been able to maintain themselves, the former by settling in the smaller towns and the latter by moving to thinly populated districts or large cities. The factory has therefore partially appropriated the field and forced the hand-worker and the weaver to do repairing and to act as retail merchants; nevertheless the domestic system will still be maintained by farmers in the thinly populated districts and by the laborers in the crowded cities, as a means of supplementing their incomes.

The concentration of the population in cities has been very marked. In 1875 there were but ten cities in the Empire of over one hundred thousand population, while to-day there are thirty-three over one hundred thousand, fourteen over two hundred thousand, seven over three and four over four hundred thousand. An explanation of this remarkable concentration is found in a series of events and movements. By 1848 there had been a very considerable transition from the "small" to the "large industries." The political changes of that year had been carried as far as they were destined to go for some time. Germany shared in the world expansion of commerce and trade that hinged upon the discovery of gold in California and Australia in that year. Her cities then began to grow at a rapid rate, continuing until 1870, when,

through the increasing immigration to America and the recruiting due to the Austrian and Franco-Prussian wars, there was a check in the rapid growth of city population. The crises which followed the rise of the new Empire and the industrial depression of several years checked the speculation following the termination of the French war and the payment of the indemnity, and after 1880, when a complete recovery had taken place from the effects of the previous ten years, a steady and healthy advance in German commerce and manufacture set in, which continued until 1897.* During this time German cities again rapidly increased in number and population.

This vast change did not mean depopulation in the agricultural districts. There no advance in numbers had taken place, the percentage of persons engaged in agricultural pursuits steadily declining with the rapid growth of the urban centers, although up to the middle of the century ninety-five per cent of the food products consumed by Germany was raised on her own soil. A great change has taken place in this proportion, for to-day Germany draws much of her food supply from foreign lands. The agriculture no longer provides the necessities of life required by her factory population, but the agrarians nevertheless have complicated the situation by demanding protection that will carry farming to a condition of prosperity equal to that of manufacturing. The fact that agriculture is not as far advanced readily explains the anxiety of the agrarians.

About the same number of people are employed in that occupation as in the United States, but the results are very dissimilar. The agricultural workers of Germany are divided into groups of laborers: those bound by long-term contracts and living in the house with their employers, and those who may be referred to as free workers. These consist of the permanently employed and the " wan-

* Weber, The Growth of Cities in the Nineteenth Century, p. 88.

derleute." The heritage of property through the co-ownership of land tends to hold the family together and to perpetuate group agriculture. Consequently the old system of land tenure, though modified in many instances, has resulted in the continuance of a small-farm system. It is said on reliable authority that there are in Germany 2,275,000 farms of twelve acres or less. To use modern machinery on such plots of ground is impossible with any advantage, so small farming with high rates of expense to production continues, making it difficult for the home products to compete with those of the foreigner.

At a disadvantage as compared with the rapidly growing commerce of the industrial branches, the agriculturists have demanded redress. The partisans of "dear wheat" and "cheap bread" contend, in consequence, for legislative supremacy. A victory for either embitters the conquered in this important contest.

In manufacture and commerce Germany has made marvelous progress. Factories have sprung up on every side; means of communication have been built, extended and nationalized; a merchant marine has been created; mining materially increased; invention and discoveries developed, and the different industries, particularly the chemical and the electrical, pushed to unheard-of proportions. "Made in Germany" is read in all parts of the world; science and skill have done their work. In the field of foreign commerce this notable land stands second. Within the last twenty years the tonnage of vessels in her ports has gone beyond the thirty-three million mark. Her trade with North America has increased 128 per cent, with Australia 475 per cent, and with South America 480 per cent. Favored undoubtedly by the experiences and experiments of her rival, Great Britain, Germany has made as much progress in the last quarter of a century as Great Britain has been able to do in a hundred years. How lasting the results will be, however, is an-

other question. Her fleet, which has come to be second in world importance and first in size and speed of steamers, is one of many evidences of industrial power possessed in a high degree by Germany.

The Germany of thirty-five years ago and to-day stand out in marked contrast, the one with a small commerce, largely agricultural in character, struggling against po-

Industrial map of Germany.

litical difficulties and poor trade facilities; the other with a great commerce, a highly organized government and a colonial system. In the days of the first Germany a disordered currency barred the door to the smooth workings of exchange and placed burdens upon shipper and consignee alike. The banking was but little developed and, such as existed, well concentrated in the larger cities, furnishing in but an unsatisfactory way the credits needed for the conduct of business. The division of the territory

into twenty-eight states under different laws and rules still further complicated the industrial machinery by varied forms of taxation and regulations of commerce. There existed a common language and a strong Prussian state, the hope of the future.

Territorially, Germany is not ideally situated either from the point of view of military protection, fertility of soil or resources. Surrounded on three sides by strong enemies, her history has been rendered more stormy than it would have been if the nation had occupied a more natural resting-place. Still, with these disadvantages, her location in the heart of Europe brought some compensations, for she was in a position to touch a great deal of the international trade passing over her borders.

In the north and east are the lowlands, somewhat barren and hardly recognizable as fertile, nevertheless under the skilful agriculture of the Germans bringing forth creditable crops. Much of this part of Germany is taken up by lakes and marshes which alternate with sand-hills. In the southeast the land is a table-land almost as barren. The fertile part of the Empire is found in the southern and western portions of Germany in the valleys of the rivers. Between the highlands known as the Baltic-Uralic lake plateau and the upland traverses of Brandenburg and Northern Silesia are the broad lowlands through which flow the Havel, Spree and the Oder.

The physical obstacles have been easily overcome and a very complete canal system established uniting the rivers named with the Elbe and Vistula. Such seaports as exist have been extensively enlarged and the shallow rivers dredged, allowing the great vessels to come to the river ports of Bremen, Hamburg, Lubeck and Stettin. Not satisfied with a canal system by itself the German States have made every effort to make the seaports the heads of canals, and as a consequence goods going to or from the center of the Empire move easily and quickly.

The railroads, instead of being hostile to the waterways, as in the United States, work side by side with the canals. The heavier freight is carried on the canals, giving the railroads the higher grade of traffic. One result only could come from a unified system of transportation, and that is greater commerce both internal and foreign.

Each State regulates its own railways, a thing probably wise, but at Berlin there sits at certain times in the year a council composed of representatives from the different States. This council considers plans for the further unification of the railroad systems, until to-day there is the same unity of purpose seen in the railroad administration as was noticed in the canal system. All things, including telephone, telegraph, railroad and canal, are made to work together for the common good. The most careful supervision and foresight have been exercised in the beginning over the construction and operation of the railroads. Even as early as 1835 the Government held the position that it is the duty of the State to occupy such an attitude in relation to the railways that it may at any time in the future interfere in behalf of public interest.

The evolution of state supervision is well presented in the stages of railroad legislation in Germany. Up to 1843 only private roads existed, but in the next four years the Government, in an endeavor to stimulate railroad construction, guaranteed a minimum rate of interest. From 1848 until 1862 the States steadily built roads which were somewhat interfered with by the speculative period existing from 1863 on to 1877, when many private roads were projected. Since the latter date there has been a rapid increase in the extent and number of state roads. In the construction of railroads the Germans have never made the mistake of duplicating their railway mileage for speculative purposes. Every application to build a railroad must be accompanied by a state-

ment of the condition, mileage and business of roads already operating in the territory. Forms of railroad-building, such as standard rails, stations, and equipment have been determined and adhered to. In fact the "railways are made real servants. All the administrative, legal and advisory bodies are originally connected with each other and the Parliament. The system presents that unity which a great business requires on the one hand; and on the other, that ramification and elasticity which the diverse and manifold interests of a great nation need for their growth and expansion." *

The mineral resources of Germany are remarkable in their quantity, rather than in the high grade of the ores. Large deposits of coal, iron, zinc, copper, and silver are found in the provinces of Westphalia, Prussia, Saxony, Silesia, Lorraine, Harz and Luxemburg. The coal-fields are extensive—the richest in Europe—and furnish German industries with fuel at low prices. The coal is well situated in reference to the iron ore so that there is no necessity of long-distance transportation. Although the iron ore is far from the richest quality, nevertheless the science of smelting has been so far advanced that no great difficulty is found in getting a good product. The development of the metallurgic industries has been simultaneous with that of mining. In the mining and iron district round about Dortmund, Duisburg and Cologne the population has in twenty years increased eighty per cent. This double production of iron and coal has given the metal and machine industries a great impulse, creating cities of large population and wealth.

It is perhaps in the electric industries that Germany has made her most rapid advancement. Throughout the Empire electric enterprises of all kinds are being developed by companies engaged in the building of plants and tramways. Through this means small villages off

* United States Industrial Commission, vol. ix, p. 983.

from railroads and canals are brought into connection with a wider market, and it is ultimately hoped to build up in Germany many of the small industries that have died through lack of tools and cheap motive force. The small electric motor will again make possible the development of the "small industry" as is already the case in the creation of knitted goods in the neighborhood of the cities of central Germany. In no country is this so well understood as in Germany. Side by side with the electrical industry, from the point of view of rapid development, may be placed the chemical industries. The same methods used in the universities are followed by the industrial chemists. The Germans, in fact, have replaced their foremen by doctors of philosophy and have reaped the benefits of thorough understanding and expert investigations. Although not so marked in their advance as the industries just mentioned, the other activities of the people of the Empire have been crowned with success. Every industry and every city has shared in this remarkable progress and prosperity.

The Germans from the first have viewed commercial development as just as necessary as the industrial, for without a system of markets and means of reaching the marts of foreign lands great production is in vain. The foreign commerce of the Kaiser-land has been built up in no small degree by its emigrants. Wherever they have gone, loyalty to the Fatherland still remained a part of the heritage, and it has taken the material form of a demand for German products. The economic edifice of Teutonic production rests upon the German business man and workman, the scientist, and the state. The Germans are educated and trained in the army of the Empire; from the point of view of a democracy such an institution reduces the number of workers and places a heavy burden upon the producer, nevertheless the training received by the German youth while in the army has

given them a realization of national interest, of the value of discipline, and the purpose of production. Coupled with the statement just made, the recognition that agriculture, industry and commerce are sciences and deserve careful study, it is small wonder that the facilities offered for the education of men along these lines are fully appreciated and used. There is in Germany a full realization of the greatness of the industrial contest. Every subject is to know this and through the schools to be prepared to take an intelligent part in it. They have, in fact, learned that the nation with the best and most skilled men will have the most advanced tools, best and finest fabrics, most effective arms, and in consequence the best adapted and most powerful organization.

Within the last ten years numerous schools of industry and commerce have been established to accomplish these results. Through the medium of these institutions the methods and the discoveries of the savants are to be carried to the people. In addition to numerous industrial schools in which young people are taught trades and arts, there are 365 commercial schools with an attendance of over thirty-one thousand. Through the industrial schools thousands of students are given the most advanced training in the technique of production, the ultimate aim being to give the working population a technical education in some trade. The Governments of the different States have come to look upon this form of education as a means not only of accelerating the extraordinary development of German industry but also of sustaining the small industry in its contest against concentration. There is also a political phase to the movement, the socialistic danger may be removed by education, because the discontent of men does not concern itself about differences of riches. Patriotic spirit developed in well-trained workmen will do much to remove opposition to the state. It has been the purpose of the Germans to

replace the old system of apprenticeship by a new training that would prepare the worker for the division of labor and specialization now existing in the greater industry.

In no sense has the commercial side of the modern industrial organization been neglected in the German scheme of education. Many of the schools are established by municipalities and chambers of commerce in the different cities to teach what may be called commercial subjects. In these schools commerce is treated as a science, the resources of other lands, their trade facilities and language, are carefully studied, and after graduation the student enters the house of a German firm or goes to foreign countries and enters the commercial houses learning their methods. When he returns to his own land he has a valuable fund of knowledge that is of great assistance to the producers of products for foreign markets. Through this system Germany has changed the manner and method of shipment to suit the purchaser, with great benefit to her commerce. With well-trained workers and a corps of expert salesmen the Fatherland is well on the way to supremacy in the world's trade.

From the beginning the Government has taken a prominent part in the development of the Empire; unhampered by discussions of the functions of the State the German motto has been accepted from the beginning, "Absolute liberty of transaction is inconceivable with stability of commercial relations." With the function of the state fully accepted, it was only a matter of course that the fundamental policy of the Government should become that of state intervention. Various schemes have been proposed, adopted and carried through, that had as their object the economic and social prosperity of the people. Many of these, such as the compulsory insurance of life and accidents, have hitherto had no precedents in the legislation of any country. The powers granted to

of the powers a federation was created in 1815 binding together the scattered fragments of former Teutonic states. The thirty years of peace following the Congress of Carlsbad, held in 1814, were filled by a gradual reaction against the bonds of federation, and instead of the expected union came the division of the States into two hostile groups. The hostility was somewhat allayed by the formation in 1833 of a Zollverein. The results were economic and political, bringing greater commercial development and a closer feeling of unity among the states party to the agreement. The feelings of the people against the Governments were fully manifested in the Revolution of 1848, and throughout Germany after that event there was a wider liberality of government than ever before. The years from 1848–62 were taken up with the organization and dissolution of the Prussian National Assembly, Schleswig-Holstein question, and war with Denmark. In 1862 Count von Bismarck began his work as the chief minister of the Prussian king, and with far-sighted vision started the process of German unification.

The first step in this problem was to deprive Austria of all interest in German territory. To do this required war, which was resorted to without great hesitation. Prussia, with well-built railroads and a thoroughly organized military system, within fourteen days after the declaration of war had 500,000 men under arms on the Austrian frontier. After a period of seven weeks Austria was conquered and the treaty of Prague gave the results of victory to Prussia. "This treaty marked for Prussia the beginning of a larger work, which because of its greatness demanded a larger time and a second victory for its completion. It was no part of the plan of Bismarck to stop when Prussian destiny was half fulfilled, to establish a national government for but half the German people, to leave the South German States outside

the Confederation, although he knew that in continuing the task he was bound to raise an issue with France, which only a resort to arms could settle." *

Under the treaty two confederations of German States might be formed whose future relations were to be settled by mutual negotiations. On July 1, 1868, the North German Confederation was created. It was not a league, nor a federation of states, but a federal state disguised under the name of confederation, in which Prussia was the guiding power. The conditions of peace left it open to the Southern States to choose what relationship they would form with the Northern Confederation. The first step to bring the two groups together was taken when Prussia called a customs parliament in 1868. The union thus created was further sealed by the unity of military systems in 1870, hastened by Napoleon's intrigues for German territory. By 1871 the conflict with France was over and German unity an accomplished fact.

"Thus, after Germany's traditional foe, who was bent upon destroying the integrity of the German nation, had been defeated and the people of Germany were once more united, it was natural that they should connect in thought their present achievements with the glories of the past, and indulge in the illusion that the imperial office of Charles the Great and the Empire of Otto I. had been revived. Intense as the enthusiasm of the people was over the results of the war, they hailed with equal delight the assurance of a peaceful policy, which the first proclamation of the new German Emperor gave to his people." †

Before the capture of Paris by the Germans, the union between the North and South Confederacies had been sealed and all was ready for the establishment of a constitution. In the spring of 1871 the Imperial Diet met

* Andrews, History of Modern Europe, vol. ii. p. 252.
† Lalor, Cyclopædia of Political Economy. Germany.

at Berlin and accepted a constitution based upon the compact of the North German Union which, when amplified and changed to meet the new political situation, gave little power to the people, but much to the Government. A federal state was now established on a national foundation with Prussia as the dominating power in the new Empire.

The war had brought out of a mystical people wonderful powers of organization; they had submitted themselves to discipline and learned the power of mass in the few years from 1860-70. The society consisted of many classes separated by almost impassable barriers. The landholders of Prussia desired a system of government, military in character; the working classes tended in the direction of an industrial state, socialistic in form. Between these two stand the commercial classes and the Jews, nevertheless national unity is assured, despite the serious problems of a social nature. Prior to the war the people were stationary in their habits and contented with their lot, but all of this was changed, their imaginations were stimulated and they became discontented with the old order. Unification of the Empire led to the ordering of legislation and the breaking down of the many petty restrictions formerly existing between states, cities, towns and villages. Immediate prosperity resulted and Germany entered upon what proved to be a short enjoyment of the fruits of victory.

Germany was absorbed from 1866–71 in the struggle for unity and the consolidation and protection of her military position in Europe. Her victories set her free to develop her industries, increase her powers of production, and to enter the markets of the world. The Emperor early recognized the situation when he said, "Germany's future is on the seas." To him it was necessary that Germany should get her products into foreign lands. The first step to this wider development was to open up

new fields to German colonization and industry; this could be done by making commercial treaties with her competitors. Her colonial policy began in 1884 and has been pushed with amazing rapidity, resulting in a wide control of African lands by the Empire. It is feared that the ambition for colonial greatness came too late. Land where white men can live has been taken up by other nations and her colonies are likely to become trading stations. The career of Germany will, in consequence, be commercial in character rather than colonial. By her superior methods and the wide knowledge of her merchants, Germany in many places has seized upon the world's trade and taken a large share of it for herself.

The internal peace of Germany is menaced by the socialist movement. The conflict of the churches against the German Government has taught the authorities to grant concessions to wide movements of discontent in the hope of allaying distrust. In consequence a remarkable series of laws has been established in Germany to meet some of the burdens of the poor. These laws have taken the form of workingmen's insurance; protection against illness and old age. It was hoped that under a system of protection it might be possible to relieve the State from dependence upon the people for revenue, but the heavy expenses of the industrial insurance together with the burdens of the military and naval establishments have made the State doubly anxious to secure other sources of income. Socialism itself has in a measure made this possible by opening the way to government interference and ownership of industrial affairs. The power of the State has in a large degree come to supplant the efforts of the individuals and to systematize and lead German effort.

When the future of the German Empire is considered, present conditions are only indications of what it will be. The administration of government in Germany is absolutely honest, every penny finds its way into the coffers

of the state. A steady rise in the wealth of the people and the commerce of the land is noticeable in the last twenty-five years and the expenses of the army and navy do not, in consequence, bear an overwhelming proportion to the income of the state. Germany has a patriotic, well-trained and skilful people, patient and disciplined. These are the necessities of industrial greatness. Nor is she likely to be limited in territory; it is more than possible that European States now disturbed by internal difficulties may be absorbed in the next quarter of a century by the German Empire. Then industrial and intellectual greatness will be fully accompanied by territorial power.

PART II

INDUSTRY

CHAPTER I

EXTRACTIVE INDUSTRIES

For four chapters the reader has pursued the fortunes of three great commercial nations in their struggles to rise in the scale of wealth production. Each of them has attained the dignity of a world State, and now competes in the cosmopolitan markets to place the products whose existence in such great quantities is due to its completed national organization. All of these nations possess a factory system, well equipped transportation facilities, high specialization of labor and a thorough knowledge of resources. A phrase has been coined and accepted as embodying their material progress. That phrase already familiar may again be mentioned in the opening of this second part as it was in the first. It is "modern industrialism." When stripped of its political and ethical significance it may be reduced to the still more comprehensive word "industry."

Men have come to include under this term all labors which contribute directly or indirectly to satisfy wants. Industry is human labor which in the thoroughly civilized state becomes an essentially progressive phenomenon. Beginning in a crude society it rises gradually to the greatness of organization; never advancing equally in different places it shows great contrasts of development. The first industry to which man devotes himself after the chase is agriculture. When there is a surplus

of field labor and some civilization manufacturing appears as a distinct form of industrial effort. Later commerce develops, transportation facilities are created and the mechanism of exchange improved.

Industries are grouped under extractive, transporting, manufacturing and commercial activities. Using this enumeration as the basis of the chapters offered in Part II, further delay in sketching agriculture, mining, fishing and lumbering may be avoided by passing at once to the presentation of the prominent features of the extractive industries.

It may be declared by way of a text that the natural resources of a nation are the real basis of its commercial and manufacturing greatness. The early discovery and use of such resources gives the nation a great advantage, but the differentiation of extraction, transportation and manufacturing as distinct forms of production is a process replete with difficulty and demanding long periods of time. The causes of this enlargement and specialization are found in the progress of the arts, the increase of wealth and the growth of population in an advancing state of civilization.

Without going into the history of industry a brief presentation of some phases of agriculture, mining, fishing and lumbering in the three great nations that have been chosen to represent industrial growth will bring the reader into a closer appreciation of the complex organization of modern industry and prepare him for the difficulties with which the state is confronted in its regulation. In view of the fact that agriculture has had a more varied growth in the United States than in England or Germany the natural beginning in the description should be made in this State.

This diversity has been due to climate and soil, character of institutions and facilities in reaching the market. The beginning of agriculture in the United States was in-

deed meager. With the exception of a few grapes, grasses and foliage plants there were no native economic plants. Every crop now grown on a commercial scale was introduced from foreign countries. In contrast the agriculture of to-day is marked by a diversification of crops and a wide development of markets. Through the agency of a better monetary system, transportation and wide-spread manufacturing, the markets have been enlarged, and in turn, acreage and cultivation. New methods have been introduced, the old continuous cropping is largely a thing of the past, and in its place there now appear live-stock raising and fertilizing of the soil. In this kind of farming the principle of give and return has been fully established. The profits of the farmer come largely from the sale of cattle and not from the marketing of corn, for the latter is used as feed and returned as a fertilizer to the ground, completing the round of give and return.

The movement of agriculture in the United States has been from a cereal to a live-stock basis, thereby forcing the decline of the ranch system of raising cattle and tending to throw the land used as ranges into the area of cultivation. In certain parts of the country the cultivation of the soil is not warranted because of its low producing power; where this is the case the movement has been an opposite one, from an agricultural régime to a ranch system. The farmers who had moved into the grass region were compelled to retire on account of the failure of crops and their abandoned farms are now rapidly passing into the hands of the rancher. Nevertheless live-stock farming, as it is now coming to be called, yields a number of results over and above the old ranch system. The first of these is the development of the farm system of rearing and feeding live stock, which has brought about a marked improvement in the breeds of farm animals. A second is found in the appearance of dairying as an industry. This result, however, is partly due to the rapid

growth of cities and the presence of transportation facilities that carry the product quickly and easily to the centers of population. Thus dairying becomes a specialty instead of an incident to farming. In this growth the creameries and cheese factories have found their way into new territory as cooperative concerns. The discovery of the Babcock test and the patenting of a process to preserve milk have so modified the dairy business that larger and larger numbers of individuals and business organizations are going into it. It has in fact been carried to the point of a factory system.

Agriculture has made wonderful advances since the colonial days. Then the hoe and wooden plow were used as the chief instruments of cultivation. The harrow was not introduced until the year 1800 and the reaper did not make its appearance until the middle of the century. What is known as the new era in agriculture did not begin until after the Civil War, when the use of machinery and the application of scientific methods were entered upon in real earnest.*

Railroad building and an enlargement of the commercial demand forced a wider variety of crops and a better system of crop rotation. This tendency toward diversification was emphasized by the low prices of cereals and live stock in 1873. Since then the same influence at different times has compelled a varied farming, as notably in 1893–96. In the South the decline in cotton quotations brought a change in agriculture stimulating trucking and tobacco growing; it was a movement, however, that will be materially checked by the high prices of cotton in 1903. The lands of the East, less fertile than those of the West, were brought into sharp competition with Western lands by the national land policy, but owing to the raising of one cereal on the prairie farms in-

* Department of Agriculture Year Book, 1899, Progress of Agriculture. (Report United States Industrial Commission, vol. xix, pp. 150–160.)

tensive agriculture on the less fertile lands was postponed for fifty years.

Although such wide-spread occupancy of land tended to check the progress toward an intensive agriculture, nevertheless it was the cause of a very extensive adoption of farm machinery in the cultivation and harvesting of crops on large tracts of land. This movement is by no means at its zenith, for Dr. Richard Gatling announced, just before his death, a motor plow that will revolutionize agriculture on the large farms of the West. The plow is to be driven by a gasoline motor of sufficient power to propel the machine with the shares at any depth up to twelve inches. It is not only to plow but to harrow, roll and seed the ground at the same time, thus saving one-fourth the cost of planting. This tendency toward the extensive use of machinery has been further stimulated by the difficulty the farmer has had in getting labor.

While machinery has been widely used the productive area of farms has everywhere increased in proportion to the improved area, which is an indication of the power of the land to grow larger crops and supply greater populations if properly cultivated. In 1850, the farms of the United States supplied the population with food and raw materials for clothing and left a small surplus for export. Since then the crop-producing area has increased faster than the population with the result that there has been a great surplus and an enormous exportation of agricultural products. With the improved methods of cultivation and the occupation of the more fertile soils there has been an increase in the number of farms. In the period 1870-90 the average size of farms declined, indicating the gradual disappearance of the " bonanza farms." Since the latter date, however, there has been some increase in size. This increase or decrease can be accounted for by the adjustment of agricultural operations of each locality

to the branches of husbandry to which it is best suited. In fact, so universal is this tendency that it takes the nature of a law which may be stated in this way: farms tend to approximate that area from which the farmer possessing an average amount of capital can get the largest return. This is a verification of the statement sometimes made that the problem of the extractive industries is to secure the most rapid development of resources with the least expenditure of human labor.

While the United States is an evidence of a country in which agriculture has developed naturally, the condition of English agriculture furnishes an excellent example of the subordination of an important extractive industry, and the results that are likely to come out of an over-excess of zeal for the stimulation of manufacturing and commerce. It is stated that there are five times as many workers in manufacturing as there are tillers of the soil, nevertheless it is more than likely that the agricultural industries create more wealth than any one group of industries. The English farmer possesses great home markets, but he is hampered by high rents, large and discriminating transportation charges, the heavy cost of fertilizers and old leases that keep him at work in the old agriculture. The nation, however, has materially benefited by the low prices of food products, but the farmer, landlord and agricultural laborer have borne the burden of the cost. The truth is that the competition of foreign lands has placed the farmer of England under a heavy handicap and brought about a material change in the agriculture of Great Britain which almost amounts to a revolution.

The movement has been from grain acreage to pasture land. More than half of the cultivable land is under the plow. The foreign competition of more fertile lands has placed agricultural products on the English market and forced the English farmer to meet the prices. This he

has striven to do by reducing the labor cost of production, but by degrees he has been forced to the wall, seeing each year a considerable reduction in his working capital. The political policy of the nation has in no way been a help to him. In the United States the farmer is shown how to use the most advanced ways through the agency of the experimental stations; in the establishment of irrigation he is stimulated to open new lands, while the rural delivery of mail tends to make his occupation more attractive. In Germany a tariff protects his products from foreign competition; but England does none of these things, and as a consequence her fundamental industry, heavily burdened by taxation, the lack of scientific culture, high rents, discriminating freight rates and unskilled labor, is on the road to a complete reconstruction.

One writer acknowledges this movement in the fullest sense. He says: "Broadly speaking, the agricultural future of the country depends on grass and market gardens on a large scale, especially the production of potatoes; and the grass is very much the more important of the two, but it should not be used for the production of cheese and butter. The use of machinery, the free import of wheat, social advantages and other causes are drawing all our population into the towns; and the future of the whole race depends on the success with which we face the question of providing the enormous infant population of our huge cities with plentiful supplies of good milk at a price within the reach of all, even of the very poorest."

The absorption of arable lands for pasture, the improvements in breeding animals and the transfer of large numbers of the population to urban centers indicate that the movement is on. England, nevertheless, as any nation must that does not produce its food supply, keeps open an access to animal and vegetable food. This means and demands a navy large and powerful, but at the same

time the constant decline of agriculture dries up the source of private and public revenue that would go a long way toward meeting the public expense. This is a sufficient proof of the statement that agriculture is a fundamental industry which can not be eliminated from national life without dangerous results.

In Germany less than half the population live on farms; the nation once agricultural has become within recent years manufacturing. Although the tendency is toward machine production, nevertheless all the available land is used for tillage or pasture; less than six per cent is unproductive although twenty-five per cent is devoted to forestry. Like England, Germany can not raise foodstuffs sufficient to meet the wants of her people. The agricultural industry has been crippled by the moving of the farmers to the towns and cities and the unwillingness of the youth to return to rural occupations after their military service. The unusual demand for labor in the industrial centers has increased the wages of farm laborers and raised the cost of production so that there is a wider use of machinery than in past years. The same evolution may take place in German agriculture as did in the experience of the United States. In the last-named country the high cost of labor stimulated at the outset the use of machinery, so that progress has been made despite the scarcity of workers and the high labor cost. What seems at first a calamity may prove a decided advantage.

Methods of cultivating in Germany have materially improved during the past few years. Through the means of a more scientific agriculture, skilful drainage, rotation of crops, improvement of seed and freedom from wars the production per acre has greatly increased. The important question in German agriculture is how much higher can the returns be pushed without increasing cost. The population has grown rapidly, demanding larger amounts of food products, but a large proportion of the

increased production has been diverted from food uses to consumption in manufacture. This usage of acreage is seen in the distilling of alcohol from potatoes, the brewing of beer from barley and the manufacture of sugar from beets. Thus the food-producing power of the nation has failed to keep up with the rapid growth of population.*

Fundamentally German agriculture is based on the village system of culture. About a rough division of labor is built a social fabric that attempts to meet its own wants. The village smith makes the tools and repairs, the tailor creates the clothing, the apothecary provides the drugs and medicines, and so on down through the lists. The artisans receive their pay in kind and a general barter system exists by which the work and labor of the members of the community are set off against products they wish to secure. Only a limited money system prevails and that in the exchange of commodities between groups. The introduction of machinery of any kind destroys the equilibrium existing in the village groups and when used is not pushed to its greatest efficiency. As long as the members of the group remain in the village they demand some part in the work and consequently the machinery, when introduced, is operated at considerable cost because of the presence of too many attendants. The movement of population referred to above will remedy this difficulty and also force the newer agriculture onto a different basis than the inadequate one of village culture. Without the machine basis Germany can not meet the demands made upon her agriculture by the population. In time the many small farms in Germany will be grouped, for the use of machinery demands an extended area to make the operation of machines a profitable venture. This, however, does not mean a revolution in land tenure or the disappearance of the peasant owner, but rather the extension of the coopera-

* Consular Reports, June, 1900, p. 162.

tive principle to agriculture in the ownership of plows, drills and threshing machines.

It has come to be a commonplace saying that the forest possessions of a nation form an indispensable basis of material prosperity. The tree furnishes ready at hand a material that has the greatest variety of applications to the meeting of the wants of man. It is, in fact, as one writer has said, "the ready cash of nature's bountiful provision for our future." Regardless of these facts men have destroyed ruthlessly these products of nature, and by their act have introduced the serious problem of water and lumber supplies and forced by a hundred years the question of forest preserves and careful lumbering.

The importance of this natural resource is well indicated in a paragraph recently published in which is set forth the value of the lumber product in the United States. "If," says the writer, "to the value of our total mining product be added the value of stone quarries and petroleum and this sum be increased by the estimated value of all the steamboats, sailing vessels, canal-boats, flat-boats, and barges plying in American waters and belonging to citizens of the United States, it will still be less than the value of the forest products by a sum sufficient to purchase at cost of construction all the canals, buy up at par all the stock of the telegraph companies, pay their bonded debts, and construct and equip all the telephone lines. The value of the annual forest products exceeds the gross income of all the railroad and transportation companies. It would suffice to pay the indebtedness of all the States, if we leave out New York and Pennsylvania, including that of all counties, townships, school districts, and cities within those States (1880), and it would more than wipe out the public debt of the United States. In fact, ranking manufactures of all kinds and agriculture as respectively first and second in importance, as far as production of value goes, the forest product occupies third

From the Twelfth United States Census.

Logging by steam power.

place. This was the case in 1880." In 1900 the product of the lumber industries reached the enormous sum of $1,030,000,000.

While the timber industry assumes enormous proportion in the United States, in Germany the product does not supply her wants, and in Great Britain the native woods have been so far depleted as to count for little in the lumber market. The German forests cover about one-fourth the area of the Empire, the largest portion being located in the highlands of the south. The governments of the different states maintain the strictest supervision over these reservations and prevent the depletion by scientific forestry methods. The supply, however, is not sufficient, as many timber products, such as oak staves and black walnut, are imported. England is compelled to rely for timber upon the United States, Sweden, Russia, Canada, Germany, and the African states; she in fact imports nearly all of the wood material for the manufacture of wagons, paper, furniture and buildings. The magnificent shipping facilities possessed by the British people in the harbors and merchant marine relieve in some measure the seriousness of their lumber deficiency.

In this industry there are three distinct divisions of operation seen in the logging operations, the saw-mill, and the sash, door and finishing factories. The first division of the work is carried on in the forests, the second at some railroad center and the third near or within easy distance of a large population. Logging has for its raw material the standing timber and for the finished products logs cut into regular lengths; the saw-mill receives these as raw material and creates lumber in various sizes as the finished product, and the finishing factories take the lumber and produce sash and doors, flooring, smooth boards, and moldings ready for the inside work of houses and buildings. As the last division of the industry brings us into the field of manufacturing we shall confine the

remaining comments to the logging and saw-mill divisions of lumbering.

The essential element in the lumbering industry is the ownership or control of timber lands. These may be acquired in the following ways: first, by purchase from owners, either of the timber alone, or of both timber and land; second, by securing homesteaders to make claims under the laws of the United States; third, by purchase of timber script issued to the dispossessed owners under the forestry reservation acts. Under the third method the owner of the script may select such timber lands as are not reserved. Fourth, they may be acquired by lease from the individual owner or the State. When the operations upon these lands shall be carried on depends upon the nature of the climate. In the New England and lake States, lumbering is prosecuted in the winter time, for the snow furnishes an easy means of transportation. The trees are felled, the trunks cut into logs of different lengths and moved on various kinds of roads by animals, stationary engines and cables and in some instances by railroads. So long as possible the streams are used as carriers which transport on their surface millions of feet of logs to their destination near some center of population. Boom companies are early organized in the lumber industry to guide the logs on their way to the mills, and the State is soon called upon to adjust the matter of measurement and sales between the logging companies and the mills. Thus at various points in the course of the stream the logs are measured, scaled and recorded for the purpose of conducting the business on a satisfactory commercial basis.

When the timber in the neighborhood of the streams is exhausted the logging companies are compelled to resort to other methods of transportation than those furnished by nature. Many efforts are made to use the tributaries of the carrying streams by damming them in

the hope that enough water will be secured to float the logs to the greater streams. Even these expedients fail in time to furnish the necessary transportation and resort is made to the railroad. Crude and hastily constructed railroads are built to haul the logs to a stream, or to a branch or main line of a railroad. When the logging industry reaches this stage cranes and machinery for handling the logs on cars and platforms are necessary. As the exhaustion of the timber supply goes on the cost of hauling increases by reason of the greater distances from mill and town. On the Pacific coast, where lumbering is prosecuted throughout the year and where the size of the timber requires better appliances, the organization of logging is carried to a still greater degree of efficiency.

It is in the mills that the real productive power of the lumber industry can be seen to the best advantage. The logs are drawn by a chain system from the water to the mill above. There a machine called a "nigger" twists and turns them with the greatest ease so that the logs may be fastened to the carriage and cut to the best advantage. When squared, the timber is passed to the band or gang saws and makes its appearance later as boards, scantling, joist or smaller materials. By an automatic device the lumber is carried into the yards and piled up to dry. Simple as this description appears the mills are highly organized and often abandoned if not well situated or properly equipped. Running continuously night and day for a period of six or eight months the output is enormous and will amount in the best mills to eight hundred thousand feet of lumber in twenty-four hours. The product is placed in the hands of consumers through wholesale and retail yards, often established by the lumber companies themselves as a means of making the producers' and sellers' profits.

The future of the lumber industry in any land must

Saw-mill, showing log booms.

depend upon the preservation of the forest areas. It is true that the lumberman is a member of the army of pioneers, for he clears the way for the agriculturist who is to come later. In this early stage the cutting of trees is ruthlessly done and no thought is given to the future. Later when the agriculturist attempts to place the stumpage under plow the demand for wood products begins to increase, and the necessity for economy in the forest inheritance becomes more and more apparent. In two ways then a limit is placed upon forest growth, one by the extended cutting of timber to meet the increasing demand, and the other by the relegation of the forest to the non-agricultural soils to make room for food-producing acreage. In every civilized land some appreciation of the necessity of forest preservation exists. Germany now controls or directs the policy of administration of her forest areas. In the United States this point of view has made itself felt but recently on account of the rapid exhaustion of her vast resources. The time has come when the interests of individuals stand in the way of the material prosperity of the community, whereas under the sway of the latter profits have been the sole object of lumbering, forest management proposes to leave an opening for private enterprise, but at the same time to economize the public inheritance.

Forest management has two objects, the production of useful material, and the maintenance and improvement of natural conditions. To secure the first object the standing timber is treated as a crop from which a harvest is expected, while the second is seen in the effort to supply a cover to the soil to prevent washing of the soil and to retard the flow of water. The first means the continuance of lumbering indefinitely with the assurance of a regular supply of lumber and the planting of trees to save to the farmers of a country the thousands of dollars each year that are now carried down the streams in the

form of soil. Thus the proper preservation of the forest has a double result found in a regular supply of timber and in the benefiting of agriculture through weather and soil conditions.

England was the first nation to utilize her coal and iron fields on a large commercial scale. She, however, possessed a great advantage in the nearness of her coal and iron fields to each other and to the seaports. The great coal-field of Durham and Northumberland is bisected by the estuary of the Tyne, on which are located the seaports which first developed the coal trade. At the southern end of this field are the iron deposits of Cleveland in the North Riding district. On the other side of the country is the Cumberland coal-field, which touches the seaports of Maryport, Workington and Whitehaven, and lies close to the rich hematite ores of South Cumberland and North Lancashire. Through the central and southern parts of England are coal and iron. In Scotland the coal-fields are near to the sea and rich in iron.* The chief coal bases of Germany are those of the Ruhe on the right bank of the Rhine, the Saar in Rhineland and Lorraine, the Saxony fields, and those of upper and lower Silesia. Iron ores are found in Westphalia, the Rhine province, Alsace-Lorraine, upper Silesia, Nassau, Hesse-Darmstadt, Thuringia and other parts. The smelting of the ore is carried on in the coal-fields, especially in the basin of the Ruhe, which is accessible to the sea-borne ores.† In the United States both iron ore and coal are widely distributed. As a consequence the chief supplies of ore are at a great distance from the smelting fuel, a difficulty overcome by the highly developed system of ore transportation on the Great Lakes. Around the shores of Lake Superior are four districts: Marquette, Menominee, the Gogebic range and the Ver-

* Chisholm, Handbook of Commercial Geography, p. 213.
† Ibid., p. 250.

milion and Mesabe ranges. Although the Lake Superior district furnishes the larger portion of the ore, nevertheless there are fields of some importance in eastern Pennsylvania and western New Jersey, Alabama, Tennessee, Missouri and eastern New York. For smelting and reduction to steel the ores are brought to the fuel in Pennsylvania, creating there a wonderful manufacturing district.

Both in Germany and the United States the question of transportation becomes an important matter in the

A modern excavating machine.

iron industry. In Germany steel is carried to the wharves at Antwerp, a distance of 150 miles, for 82 cents a ton, but this feat is hardly comparable with the highly organized system of ore transportation existent in America. There, in the Lake Superior iron-ore regions, a steam-shovel scoops up the ore from open pits, filling cars easily and rapidly at the rate of fifty an hour. The cost of mining varies from ten to forty cents a ton. The ore is then carried in the cars to the neighboring ports on the lakes, dumped into bunkers, and loaded into large vessels

of six thousand tons capacity in two or three hours. At the receiving ports the cargo is unloaded by machinery, placed on cars of great capacity, and carried to the smelters a hundred or more miles away.

To keep pace with the progressive growth of demand for the metals there has been forced a wide development of mining methods and engineering. As a result, the mining and hoisting of the ores to the surface for treatment have been greatly improved. The improvements have been particularly in the direction of excavating and cutting, better methods of hauling, handling the materials at the shafts and on the surface, mine drainage and transportation above ground by locomotives and cars. The increase in output, especially in the coal-mines, may be traced to the invention of the pneumatic drill and the undercutting-machine. Improvements of this character have required much larger investments of capital in the mining industry. In the various mines where gold, silver, copper and coal are mined the shafts have gone deeper into the earth until expensive pumps and hoisting apparatus are required to lift the water and the ores to the surface, adding materially to the cost of mining. These expenses are offset by a larger output, better ore disposition, a higher order of mine management and the introduction of mechanical appliances wherever possible.

A part of mining is the ore concentration and metal extraction. The term "concentration" is used to indicate the process by which the metal in an ore is reduced to smaller bulk and raised to greater purity. This result may be accomplished by the old-fashioned method of hammering, or by crushing the ore through the agency of machinery, and separating the metal from the rock substances by water treatment under the influence of gravity. By this method many ores too poor for industrial purposes can be enriched to the degree of making their use profitable. The processes in the concentration of

ores are, first, the washing with water, sorting, breaking up by crushing machines, and the sifting of the product, and second, the separation of the crushed particles by the use of water, by motion in air employing fans or by magnetic concentrators using endless belts, rolls or deflectors.

In the metal extraction there are two methods known as the furnace and the chemical. The first of these employs

A cyanide mill at Mercer, Utah.

heat to reduce the ores to a metal mass by roasting and smelting. In the case of iron the roasting in revolving cylinders is omitted and direct furnace treatment used because of the greater richness of the ores. The smelting process is carried on in a blast furnace whose height is often one hundred or more feet. The furnace is fed at the top with ore, coke and limestone, in the general proportion of one and two-thirds tons of ore, less than a

ton of coke and half a ton of limestone to each ton of pig iron. Under the great heat produced by forcing hot blasts through the molten metal, the limestone fuses with the iron ore and forms a covering of slag under which is the pure iron. The molten iron is then run off into pigs and is ready for conversion into steel. The great process by which this is done is known by the name of its inventor and consists in forcing cold air through the pig iron reduced to a molten state, resulting in the burning of the carbon in the pig iron. A Bessemer converter is lined with various non-fusible substances whose character depends upon the composition of the pig iron.

It is particularly in the production of gold that the chemical process is used for metal extraction. The one method of this kind that has done most for the metallurgical sciences is the cyanide process invented in 1890 by Messrs. MacArthur and Forest, and is based upon the solubility of gold in weak solutions of potassium cyanide, from which it is subsequently obtained by precipitation with metallic zinc or electrolytic deposition.* The process is applied to large quantities of crushed rock and to the tailings from the stamp mills with such profitable results that it is worth while to mine a very low grade of gold-bearing rock.

One more of the extractive industries remains for consideration. Upon it we depend for a large part of our meat diet, and for centuries the industry has furnished food for the Catholic countries in Europe and the Americas. The reference is of course to the fishing industry. The conditions under which it is pursued divide it naturally into salt-water and fresh-water fisheries. In the main the salt-water fisheries are near the coasts of the cooler northern seas, extending from the mouth of the Delaware on the American side of the Atlantic to the Mediterranean Sea on the European side. On the Pacific the

* Report of the United States Industrial Commission, vol. xix, p. 243.

fishing is conducted along the western coast of America from San Francisco Bay to beyond Bering Sea. Each nation by national agreement reserves for its own fishermen the privilege of fishing inside of the three-mile limit, outside of this reservation the fisheries are open to the world. The principal products of the salt-water fisheries are the cod, herring, shad and salmon on the American coast, and the mackerel, tunny, sardine and anchovy on the European coast.

The difficulties of ocean fisheries are steadily requiring larger numbers of men, better ships and longer voyages. The product has undoubtedly grown, but the cost of getting the product to the market has also increased. In the oyster industry the steam-dredge catches a larger product than the old sailing craft, but nevertheless at the possible expense of materially reducing the supply. Steps have been taken to meet this difficulty by establishing a system of oyster culture. The chief products of the lake fisheries are white fish, trout, herring and sturgeon. The industry is prosecuted with considerable vigor on the north shore of Lake Superior.

The fishing industry has been materially affected by the canning and refrigerator methods. Nearly the entire salmon catch is put up in tins and sold all over the world, while fresh fish can now be placed in the city markets in good condition through the use of the refrigerator, thus opening the inland markets to the sale of salt fish. Dried fish are prepared in large amounts and find a ready market. The fishing industry is not limited to the use of the catch for food alone, for in many instances the fish are used to make oil for dressing, tempering steel, making rope and compounding with other greases, while the refuse fish are used as a fertilizer.*

In every industry indicated as extractive, nature plays an increasingly important part, forcing men to plow deep-

* Report of the United States Industrial Commission, vol. xiii, p. 125.

er and harrow oftener, to cut more and more undesirable timber at an increasing cost of transportation, to delve deeper into the earth for minerals, constantly increasing the expense of pumps and hoisting, and finally to build larger ships in order to go farther out to sea to get the fish of the ocean. The return from these enterprises, measured by the amount of product, is in relation to the expense of extraction a diminishing one, thus giving

Hoisting engine.

foundation for the economic law known as the law of Diminishing Returns. Through the agency of inventions or discoveries it is quite possible for an extractive industry to pass into the realm of an increasing return. In mining where the introduction of machinery has been very marked the finished product is undoubtedly increased in proportion to the cost, but the extraction of the ore from the earth is in most mining industries an increasing expense.

A notable example of this is seen in the mining of anthracite coal, the increased cost of which has led to the substitution of bituminous coal for manufacturing uses.

As the resources of nature approach exhaustion the law becomes more and more inexorable, placing heavy burdens upon society in the securing of materials. Man has it in his power, however, to prevent the full weight of the burden from falling upon society. In a measure the better transportation facilities furnished by railroads and steamships bring distant supplies to industrial centers at comparative low costs. Inventions and discoveries creating substitutes or permitting a more extended use of the supplies already at hand, postpone the day of a diminishing return. Likewise better methods of organization, more serviceable distribution of products and a higher stage of agriculture, tend to increase the product without an increase of cost. Nevertheless, the days of a diminished return are already present in the lumbering and fishing industries. It is possible in the first-mentioned one to prevent waste and destruction by forestry methods, but even then the cost of the product must be greater than at present. In the fisheries the supply is gained by harder work and more extended voyages, but the immense fecundity of fish may be brought under control and a wonderful food supply provided. Agriculture presents a seeming anomaly, but it is due to the primitive culture of the soil now followed in most countries. The time may come when there will be an increasing return, but there is always a limit in the power of a given area of land to produce.

It is just this tendency toward diminishing returns that makes the extractive industries peculiarly susceptible to monopoly control. The one exception to this statement is agriculture, but mining and lumbering are controlled in more than one instance by monopoly holdings. Such a monopoly arises when the supply of raw material is suffi-

ciently limited, especially geographically, to make possible the control of the supply by groups of individuals. But even such a control through ownership hardly amounts to a monopoly unless assisted by transportation facilities. The recent troubles in the anthracite coal regions bring this very clearly to mind. Even with a restricted district and a limited area in which the entire national supply has been found, it was not possible to

Landing at the top of a mine shaft.

establish a monopoly without the aid of the railroads. In those natural resources scattered over a considerable area monopoly has not been fully realized, but the rapid cutting of forests and the absorption of oil-, gas- and coal-fields have brought such raw materials very close to a monopoly control through unity of interest if not of ownership. The process by which control is obtained is seen in the absorption of the property of individual owners

which results too often in the control of the supply, especially where it is materially limited. In the United States such control has been obtained in the anthracite coal-fields and to a smaller degree in the bituminous regions. In lumber and mineral supplies similar methods are used, although the wider areas of forests and minerals make the control of materials more difficult. In Germany some attempts have been made to prevent the control of natural resources by private individuals and in some degree the Government has been successful, especially in the ownership of the forests and of the salt-mines. In the United States, now that private interests have secured control, the people are beginning to question the principle of excessive individualism and to look forward to the possible dangers from monopoly of natural resources.

CHAPTER II

TRANSPORTATION

TRANSPORTATION is the act of carrying economic goods and persons from one part of an industrial society to another. In the continuance of the act, a society is brought into union and soon binds its different parts together by the facilities provided for moving goods and passengers. As seen in its modern form transportation may be considered the best example of social and industrial organization. Through its rapid development the territorial division of labor is encouraged which leads ultimately to centralization and wide specialization of industry. This point is brought out more clearly by reference to an example illustrating the relation of facilities to resources. If a certain location affords supplies of iron and coal for the use of industrial man and the raw material is extracted, there must arise industries closely connected with the mining, such as the production and repairing of tools in the neighborhood of the mines. If fortunately coal is near by the place specialization becomes centralization and a giant industry is founded. Without transportation facilities, however, the vast product could not be easily distributed to other centers where other products are being created. Exchange, too, must take place before there can be any wide benefit derived from the operation of the mines.

The movement of population from the primary places,

where extraction of raw materials goes on, to the secondary production places has been due to the cheapening of transportation. The importance of local natural advantages has been decreased thereby and the artificial advantages of production materially gained. The whole tendency has been to shift the production, except in the case of the earliest stages of manufacture in the preparation of raw materials, from the resources to the market.

By this movement both internal and external trade are encouraged, the one by securing raw material and the other by the furnishing of an outlet for the manufactured products. But transportation also influences demand by extending the field of the market and opening the way to new consumers. In the smaller cities the merchant may now decrease his stock because he can rely upon the transportation facilities to bring the goods from the great warehouse in the neighboring large city; he becomes by this method of business an agent of the larger concern and an outlying station for the great city. By its power to equalize prices between places transportation has materially enlarged the market. Many goods which might have been lost to society are rescued and brought to the selling place, where they are disposed of in meeting the varied wants of a people.

In the movement of goods there may be a break on account of the transfer from one form of transportation to another or because of a change in the ownership of the goods. The first may be observed in the break in traffic where land and water transportation meet, as in the instance of transfer from canal to railroad, from seagoing vessels to lighter craft, from railroad or canal to ocean steamer. At such points where breaks in cargo occur, there soon gathers a population busily engaged in the transfer of the goods and ownership; as the business grows storage docks, switch-yards, elevators, warehouses

and specialized groups of labor are necessary. Around about these soon appear other groups of population and secondary forms of production are established for the purpose of furnishing many of the supplies required to support the enlarged population. The great commercial city is however the result, not only of a break in the transportation, but also of a change in ownership such as is found in a seaport town where imports change hands and exports are turned over to foreign merchants. In the greater city there must be added to the facilities required in the smaller town, at the point of interruption in transportation, the personnel of commercial houses, brokerage and commission firms, bankers, lawyers and underwriters to create the great commercial center. As the perfecting of transportation goes on through invention and concentration of management, the tendency is to do away with breaks in transportation, limiting the importance of smaller cities and magnifying and increasing those where the interruption in the movement of goods is accompanied by a change in ownership.

Both in England and the United States, and to a somewhat lesser degree in Germany, the most important element in the movement of goods is the railway. The same instrument of commerce is at once the most typical expression of national industrial organization and the best organized phase of modern industry, a feature that may be accounted for in some degree by the pressing demands for transportation facilities and the early monopolization on the part of railway companies of the canals and waterways. In Germany the canal is a well-recognized factor in the traffic situation, and as such has done much for the shipper, a condition that has not existed in England and the United States as already explained.* The railroad has therefore come to be pre-eminent as a transportation factor in these two countries.

* Latz, Verkehrsentwicklung in Deutschland, 1800–1900, pp. 94–107.

In Europe the railway has followed trade, in America it has preceded commerce; this has been due to the land-grant system and extensive encouragement given to its construction and operation.

The railway furnishes a magnificent example of an extreme form of corporate activity; in its organization it differs materially from other forms of business, requiring a large permanent investment for a narrowly defined purpose which once invested must remain.* Locomotives are always locomotives, and when worn out they find their way to the scrap-heap. If unhappily the business of railway operation does not pay, the owners can not contract their capital, for it is in a form that can be used for one purpose only, that of transportation. On the other hand as a usual thing the railroad has a monopoly, the character of which depends upon the territory, the resources of the country and the population. The stages of civilization, too, affect the transportation that will be provided and the amount of capital that will be put into rails and equipment. The development and operation of the railway are more wonderful than its construction. They are thoroughly tested in the cheap handling of freight and passengers, and on account of this accomplishment the railway has grown from an incidental to a principal element in the development of markets.

The rapid advance in transportation has been due to economies in operation in proportion to the work done and is accounted for by three things: improvement in track and right of way, increased efficiency of cars and locomotives, and the increased train-loads and larger revenues.† Even as late as 1880 only about one-third of the railway mileage of the country was laid with steel rails; since that date their weight and size have materially increased, which has resulted in the use of larger cars and locomotives and the lowering of the rate per ton on ship-

* Hadley, Railroad Transportation.

† *Report of the* United States Industrial Commission, vol. xix, p. 291.

ments from three cents to less than one for each mile of carriage. A locomotive of two hundred and fifty thousand pounds is no longer considered a curiosity, though the drawing power of such monster machines has increased fifty per cent since so late as 1895. In a like measure the size and capacity of freight-cars have been augmented so that a car of to-day has a capacity of from eighty to one hundred thousand pounds. Some of the steel hopper-cars used in the coke and ore trades go beyond the figures just mentioned. The great difficulty in all railroad operation is to keep cars loaded and moving in both directions. It is stated on eminent authority that freight-cars were used one hour and fifteen minutes out of twenty-four. It is not surprising then that the average train-load is comparatively low when the number and carrying capacity of cars are taken into consideration. In 1899, the average paying freight-load of a train was 243.5 tons; on the Pennsylvania the average was much greater—480 tons. Occasionally single trains have been known to carry as high as 2,400 tons of paying freight.* With great locomotives, magnificent railroads, and large cars of great capacity, the problem is no longer hauling power but management of train movement. The solution of this part of the problem of transportation is hampered by the expansive requirements of terminals and the cost of real estate in the large cities.

To put this transformation even more specifically may not be entirely objectionable to the reader. Twenty tons was regarded as a big load for a locomotive in the early days of railroading. A notice is said to have appeared in one of the Philadelphia papers of an early date that the locomotive engine would depart "daily when the weather is fair with a train of passengers, on rainy days horses would be attached."† In sharp contrast are the

* Report of United States Industrial Commission, vol. xix, p. 291.
† New York Evening Post, January 12, 1901.

one hundred thousand pound phrases used to aid in the description of modern transportation. In the year 1885 the ten-wheeled compound engine was built, guaranteed to haul 3,600 tons of freight on a level track. A few years later this amount had been increased to 4,000 tons, and to-day a locomotive can draw a train of from 25 to 30 cars carrying 100,000 pounds of freight to each car. In 1874 a freight-train on the Erie consisted of 22 cars drawing 106 tons of freight. In 1876 this had been increased to 38 cars and a train-load of 238 tons. But the car of to-day as compared with the car of a few years ago is stronger, larger and heavier. The steel car now weighing 38,200 pounds has a carrying capacity of 110,000 pounds. It is declared that there is more expense to earn $6.59 per train-mile with wooden cars than there is to earn $11 per train-mile with steel cars. To put it in another way, 1,000 loads carried in 100,000 and 60,000 pound capacity cars would mean 25 trains of steel cars and 31 trains of wooden cars, a saving of 6 trains and 729 tons of dead weight. Many other figures might be given in reference to the speed of trains and their carrying-power, but enough has been said to bring clearly into view the vast improvement in the transportation of freight by the railways.

There are two great divisions of the transportation problem, management and financiering. To the first belong operation and rate determination, while to the second cling the questions of construction, raising the funds and their expenditure. The object of all railroad operation is to secure the greatest efficiency with the smallest expenditure of time and money; as a consequence railroad managers have striven to increase the working power of trains—passenger and freight. This they have been able to do, as was shown in the previous paragraph, by getting better road-beds, larger locomotives and cars and greater terminals. All of this effort has resulted in doing

A flour train of forty cars, showing specialization of transportation.

more work at lower pay than in the earlier days of railroad history when large charges and small loads were the rule. At first railroads were operated with mixed trains carrying freight and passengers, to-day specialization has been carried to the point of trains equipped for special service and of tracks given over to incoming and outgoing trains, and on some of the larger roads to special kinds of traffic.

It will thus be seen that the manager of a railroad is not only confronted by the necessity of performing the service of transportation, but also by that of keeping the railroad property up to an efficient working standard. In the conduct of the first he is between the upper and lower grindstones of stockholder and shipper. The first demands a low percentage of operating expenses and the second requires good service at fair rates. He can not give service at the expense of safety, so as a natural result he is hemmed in by economy, safety, and cheap transportation; within this triangle of difficulties he must solve the problem.

The railroad relies for its income upon the receipts from hauling freight and passengers. The various kinds of freight, distances hauled, amount of shipment, all complicate the problem and make rate-making one of the most difficult questions a railroad manager has to deal with. The classification of freight is an early necessity requiring standards of goods, weights, and distances. After sixty years of railroading and the repeated suggestions of the Interstate Commerce Commission classifications are not uniform and much discrimination exists by means of wrong classification. A distinction, too, is made between competitive and local business; upon the second must, in the words of a well-known railroad manager, rest the cost of operating the railroad, while the carrying of freight at any rate above cost from competitive points increases the income of the road and reduces

local rates.* The continued and steady decline of freight rates since the Civil War gave way in 1900 to a marked advance which was due, oddly enough, not to direct changes in the tariff, but to modification of the freight classification.† Such a decline, however, is entirely in harmony with the law of increasing returns, which applies with unusual precision to railroads, for the total cost of operation increases less in proportion than the amount of business transacted. To put it in another way, the net returns increase more rapidly than the expenses of traffic. The science of freight-rate-making has been greatly assisted by the division of the territory in the United States between three committees who have jurisdiction over the classification. Nevertheless, the difficulties of long and short hauls, big and little shippers, crude and refined goods, car famines and plethora of cars, complicate the situation and materially affect the industry of a region through which the railroad passes.

Pools, committee systems and agreements of various kinds have proven inadequate to solve the problem of rate-making. The solution seems to rest in some form of consolidation. In the earlier days of railroad operation the purpose of combinations was to establish a system within a trade district, hoping by superior management to dominate the district. These districts were based on administrative considerations and did not rest upon the geographical relations of territory to the road. To-day the grouping of railways under one authority within a specified territory is accomplished by a "community of interest" sufficiently strong to dominate the traffic situation within the territory. Through the medium of absorption and "community of interest" great trade districts are coming under the control of railroad groups, and in all likelihood steady rates, a thing long desired by the

* Haines, American Railway Management, p. 202.
† United States Industrial Commission, vol. xix, p. 281.

railroads and shippers, may be secured. The unity of railroad interests becomes assured when competition is banished and an equitable and satisfactory division of the business takes place through the medium of "community of interest."

Meantime the individual railroad struggles to increase its resources; two general ways are open to do this, one by borrowing, the other through the medium of the more

A dredge used in gold mining.

satisfactory method of increasing earnings. Every railroad has been compelled to get capital by borrowing or selling stocks. The road may borrow by mortgaging the equipment, roadway and terminals, or through the sale of bonds, guaranteeing future payment to scattered individuals, secure a loan. Shares of the capital which partake of the risk, and unlike the bonds are not guaranteed a regular return, are sold in preferred and common

forms. Through the medium of loans, mortgages and sales of stock, the road gets together the funds necessary for the purchase of equipment and after that may rely to a very considerable degree upon the earnings for the expenses of operation. The earnings are due in a large measure, about seventy per cent, to the freight traffic, and the remainder comes from passenger business and the rentals of tracks and terminals. In the expenditure of its funds the expenses of operation, fixed charges of interest and the payment of dividends take most, if not all, of the annual income. In looking over the difficulties of management in the operation of railways, with the economic, legal and financial questions involved, the duties appear as varied as those of the departments of the United States Government. As compared with the affairs of the United States in its first fifty years of existence the railroads of to-day are stupendous in capital, equipment and organization.

The most difficult feature of modern railroad operation is to secure satisfactory and sufficiently extensive terminals. The short time of car operation is no doubt due to the crowded condition of terminals; in fact, vessels have been known to refuse cargoes of coal as return loads because of the delay in discharging their contents at lake ports. It is quite within the range of possibilities to so limit terminals by the excessive cost of land and heavy taxation as to nullify much of the gain in moving freight on main lines now secured through large cars and heavy locomotives. At the points where transportation is broken great terminals have been built regardless of expense. These have been constructed for the purpose of handling coal, storing grain and of keeping live-stock for a certain period. At Toledo, and other local lake points, grain elevators were constructed as early as 1866. The vast elevators erected on the Atlantic coast were built in the year 1865. The use of these elevators as storage places

for grain has undergone almost complete revolution. Formerly the local dealer consigned to the large merchants certain amounts of grain, which were stored in the elevators by commission men and finally sold when the market was advantageous to purchasers. Under that system the grain passed through several hands and many commissions were demanded before it finally made its way abroad.

But to-day all of this is changed, and the elevator company instead of providing a storage place for grain

A modern elevator.

now buys directly from the producer and sells directly to the foreigner. This means, of course, a more rapid transportation of grain and better facilities for the producer in the sale of his product. In 1850–'60 the cities of Chicago, St. Louis and Milwaukee were the primary grain-markets of the West and Northwest. Since the eighties the production of the Western and Northwestern States has increased from ten to about sixty per cent of the grain-crops of the country. About Chicago have been built great elevators, making that city with its position at Lake Michigan the leading primary wheat-market of the

world. Transportation, however, has brought that honor to Minneapolis, and in view of the large flouring mills there she is likely to keep it. The elevators in Chicago, left idle by the change in the market, at once became purchasers of grain for export trade, disturbing the grain-commission business in that city. The practise of buying grain by elevators is of recent growth, resulting in low through rates by agreement with the railroads from field to seaboard. The business is now done on a large scale without the many small dealers of other days.

In the fall of 1901 there was presented a curious example of grain movement due to the influence of the elevator men. Trains loaded with wheat passed each other on the roads leading to the Southwest. For Kansas to ship wheat to the Northwest is unique, but for the Northwest to send wheat to Kansas at the same time is, as said, a curious phenomenon. The wheat of the Northwest was light and below grade "No. 1," the Kansas wheat was unusually heavy and above grade; by mixing the two Northwestern wheat would pass the grade inspection. The difference in price was sufficient to make the movement possible, and the situation was taken advantage of by the elevator men of the Northwest to improve the grade of wheat coming into their hands. The instance just cited illustrates the wide knowledge of business men and the effect upon the movement of commodities occasioned by small differences in price.

Waterways have always had a strong influence upon the movement of commodities. This has come to be thoroughly recognized in the United States and in Germany. In the first country it is the natural waterways that supplement transportation, while in the second artificial canals compete with the railroads for a part of the traffic. The great lakes in America furnish an admirable means for the movement of freight during the open season. Upon these steel vessels of 5,000 tons burden move, carry-

ing the heavy extracted products of the Northwest to the ports at the foot of the lakes, and returning with coal and steel rails to the harbors at the head of these inland seas. During a period of eight months in the year the lakes are open to navigation, influencing during that time the rates and tonnage of the railroads in the North. The evidence of a vast traffic is seen in the fact that in the year 1901 over twenty thousand vessels carrying twenty-eight million tons of freight passed through the Canadian and American canals at the "Soo." It is the geographical position of the Great Lakes that gives them this commanding position, connecting, as they do, the primary grain-markets and ore-mines of the Northwest with the manufacturing States of the East. On the lower lakes the traffic is chiefly conducted in connection with railroads, the vessels acting as collectors and distributors of freight.

Outside of the few canals in the United States connecting natural waterways the function of transportation is almost entirely given over to the vessels on the Great Lakes and the railroads. Early in the history of transportation in the United States the railroads secured for themselves a monopoly of carrying freight and passengers by purchasing the canals. In Germany the canal divides the honors with the railroads. The early canals in that country connect nearly all the great rivers running through Prussia from south to north with the Baltic or North Sea. The great progress of Berlin during the last twenty years would have been impossible without these artificial waterways. Magdeburg, too, owes its prominence as the center of the beet-sugar industry to the canals. A very different policy has been followed in the "Fatherland" from that in the United States. In the former the canals are owned and managed by the Government for the benefit of the people. The traffic is immense, the rates low, but the pecuniary advantage to the Govern-

ment very great. No doubt exists on the point that Germany's prosperity has been materially advanced by her canal system. On a number of the larger rivers in the United States there is a very considerable movement of heavy freight. From Pittsburg to New Orleans the towing companies have a monopoly of the coal traffic and the rates have been reduced materially because of their competition with the railroads. About fifteen per cent of the cotton tonnage between St. Louis and New Orleans is carried by the river steamers of the Mississippi. The effect upon rates is very marked, the river steamers virtually determining it between St. Louis and New Orleans. In order to compete with St. Louis the merchants of Chicago insist upon a similar rate and get it, demoralizing the rate situation as far as the Great Lakes. It is also possible for the heavy Southern commodities to get into the upper Mississippi Valley at low rates by coastwise vessels, the New York State canals and the lakes. The railroads have as a usual thing been able to carry freight so much cheaper than the canal-boat and river steamer that there has been little encouragement to develop the waterways; nevertheless, the competition of the two has always been beneficial to the shipper.

Since the beginnings of international trade ocean shipping has been an important element in the business of transportation. The great steel ship that to-day renders the work of ocean carriage so efficient is scarcely twenty-five years old. It was not until 1885 that the British Admiralty accepted the triple-expansion engine for the men-of-war of that nation. The great steamship is, then, a modern machine of transportation. The importance of a nation's merchant marine becomes paramount only when that nation has completed its own industrial organization; when that time is reached the necessity of entering the contest on the seas becomes more and more apparent. It is always in a supplementary

capacity that the merchant marine of a nation must stand, for without material development of its own resources there is no basis for international trade. But once in full operation the surplus products created by the organization must be exchanged with other lands.

The three factors in the growth of a merchant marine, outside the existence of products to carry, are the ships, the ports and the sea. Very rapidly indeed has grown the technique of naval building; the use of steel, triple- and quadruple-expansion engines, twin screws, and tubular boilers all render modern vessels things of power and great carrying capacity. There is, however, a limit to speed, for the expenses of operation increase rapidly with the speed of a vessel. Carrying space is filled with coal and machinery, rendering the vessel useless except for express, mail and passenger service. A remarkable increase in the size of freight vessels has taken place in the last two or three years, such vessels now being built to carry from twenty to twenty-five thousand tons of freight. In fact, so large are modern vessels that many ports are unable to accommodate them. The maintenance of ports, especially where nature has not materially assisted, is a difficult matter, for it is impossible for such large vessels to reach the wharfs and docks. Such a port is doomed so far as international trade is concerned, for the prompt unloading of vessels is one of the essentials of modern trade. To accomplish this pneumatic cranes lifting 120 tons at a time have been placed on the docks, while elevators are able by their machinery to move 120,000 bushels of grain an hour; with such facilities vessels are rapidly unloaded and the movement of commodities greatly facilitated. The third element, the sea, is entirely a product of nature, still it must be measured, charted and guarded to protect the vessels in their movements on the seas. As a usual thing the governments of the marine states have taken this upon them-

selves and provided the necessary charts, measurements, lighthouses, and life-saving crews.

Not many years ago the clipper-built sailing ships carried the bulk of the world's trade. The invention of the steam-engine and the opening of the Suez Canal gave the iron or steel steam vessel a great advantage in the movement of commodities. Within recent years, however, the sailing vessel of six or seven thousand tons has made its appearance, built of steel, and operated by a small crew aided by steam windlass and hoisting machines. It is able to carry heavy freight at a very low rate, competing with the tramp steamer and oftentimes doing as well so far as length of voyage is concerned. The size of these vessels increased 100 per cent from 1884 to 1894, while steam vessels made an increase of but 50 per cent in size. Under the new organization of industry the sailing ship has a place, and an important one. As an instance of this a statement concerning Pacific freights may be quoted: "New York to San Francisco freight rates are determined by the cost of carrying by vessel by sea from the Atlantic to the Pacific seaboards." The complaints of Middle West shippers on Pacific Slope rates bear out the statement just referred to.

Railroads are the means by which the center of the industrial organization sends commodities to its borders; ships are the facilities through which the product reaches foreign lands. Both are essential, but it is the first which tends to control the second. Shipments originating in the interior are moved by the railroads and sent abroad on vessels engaged or chartered by the roads in whole or in part. To control the entire movement of the commodity from shipper to receiver is but a natural wish which has been followed recently by very close affiliations with great steamship companies. It is the railroad that remains the controlling power in transportation, assisted by the canal, the natural waterway, and the ocean vessel.

Events point to the close affiliation of these elements under the direction of the railroad. When such a stage is reached the nation which has a well-developed railway system in close affiliation with steamship companies will be in the position to win the "contest on the seas," for success in that contest must be determined by the ability to get the right articles to foreign markets in the quickest time.

CHAPTER III

MANUFACTURE

BEFORE a vast amount of production is possible, the earth must be searched for materials and long lines of cars and great fleets of vessels filled with raw materials to be placed in industrial centers. Still, the subordination of the elementary industries to the formative stage of production overshadows the exceptional improvements in railroad, steamship and transportation facilities and marks the industrial organization by the factory system. The factory system, the term now used to designate the methods of production in vogue in the modern industrial organization, is the evidence of a world set up on iron and coal. These have been supplemented through their material manifestation in the form of railroads, steamships, and means of communication, and resulted in the development of great commerce and a struggle of nations for commercial supremacy.

This form of national contest has taken the place of robbery and struggle for political power so evident in past history. The advance of civilization, together with the rapid accumulation of property in the past century, has eliminated plunder and made war a distinct disadvantage to the nations engaging in it. The contest, however, still goes on, not in an intermittent form as in the days of yore, but as a continuous industrial struggle for control of world-markets. Success in this contest de-

pends as of old upon racial qualities and also upon tools, organization and resources. The nation, then, that has organized out of its possessions of iron and coal a factory system and developed with it a higher order of intelligence, stands in an advantageous position in the conflict. The possession of a factory system is not alone sufficient to make a country victorious in the attempt to control the markets of the world, for the new mechanical production has worked a revolution in economic affairs, in the distribution of industry, commerce and trade, national policies and social conditions. The machinery, tools and organization of an older régime hardly suffice to keep a nation in the front rank in the face of the new inventions, late discoveries and better establishments.

The dominant elements in this late development are found in the great increase of product, the growth of the by-product, specialization, and localization of industry. The first of this list which so typifies modern production is due to the presence of the factory system; the second to an extended division of labor not only in single factories but also between industries and within industrial groups; the third to the invention of special tools to meet special wants such as the coal-cutting machine, track cranes and electric cranes; and the fourth to standardization and the system of interchangeable parts. Of these there is much to be said; the factory system awaits an audience, and to this topic we ask the reader to turn.

"Manufacture is a word which, in the vicissitude of language, has come to signify the reverse of its intrinsic meaning, for it now denotes every extensive product of art which is made by machinery with little or no aid of the human hand; so that the most perfect manufacturing is that which dispenses entirely with manual labor." It is with these words that Dr. Andrew Ure, writing nearly a hundred years ago, indicates the transition from hand

production to machine manufacture. Continuing, the same writer says: "The term 'factory system,' in technology, designates the combined operation of many orders of work people, adult and young, in attending with assiduous skill a series of productive machines continuously impelled by a central power."

The word itself, however, has undergone various interpretations. In the days of the Middle Ages a factory was an establishment of merchants resident in a foreign place and formed for mutual protection and advantage. They usually occupied special quarters under their own control, and sometimes fortified their posts and depots. As used to-day, the meaning is very different, although still designating a building or series of buildings. The word also includes the machinery, the engines and propelling gear within the walls. The modern notion of the word factory received legislative sanction in the year 1802, when the term was applied to places where spinning or weaving was carried on by machinery.* Since then the designation "factory" has been applied by statute in different countries in a manner constantly varying and often inconsistent. The term then still remains undefined; for relief in the matter we turn to a definition, now classical, presented in the tenth census of the United States by Carroll D. Wright. It is there defined as follows: "A factory is an establishment where several workmen are collected for the purpose of obtaining greater and cheaper convenience of labor than they could procure in their homes, for producing results by their combined efforts which they could not accomplish separately, and for preventing the loss occasioned by carrying articles from place to place during the several necessary processes to complete their manufacture." Even this definition conveys no idea of the present organization known as a factory, with its gigantic engines, great buildings,

*42 George III, Cap. 73.

whirring machinery, numerous workmen and commercial organization. It is perhaps more nearly characterized by the modern word "plant." But whatever the term, the principle of the factory is to substitute the partition of a process into its essential constituents for other division or gradation of labor among artisans. The essential elements which enter into the make-up of a modern factory are buildings, machinery, a central motive power, and consecutive processes of production.

It was indeed the passage from the tool to the machine which made the evolution of the steam-engine a necessity. The tool may be defined as an instrument of simple device operated directly by the muscular power of man, or, as the dictionaries put it, any implement used by a craftsman or a laborer at work, meaning of course directly used by the craftsman. A machine, on the other hand, is defined as a combination of mechanical devices driven directly by an extra-superhuman power or indirectly by muscular power. In the use of the tool the engine does not enter as a factor; it is only when the tool becomes by evolution a machine that industry, through the size, expense and weight of the machinery, is driven from the shop to the refuge of the factory. The change nevertheless brought greater power and productivity, cheaper goods and wider markets.

It is commonly declared that there are three parts to a machine. These are the motor, the means of transmitting power and the device for making the final contact with the raw materials. As soon as a great central motive power came to be a possibility the individual machine became in the first stage of the factory evolution nothing but a mere factor in production. It sank into the whole organization of production, and no longer stood forth as a single thing as it did in the days of the domestic system, but was a part of the whole. Under the wider development of the factory each detail machine furnishes the

raw material to the one next in order, and the whole forms a series of iron slaves driven by a relentless power to the creating of products.

The manufacture of products by machinery has demanded the making of machines by machinery, a result directly traceable to the increasing products and the decreasing purchasing power of units. Thus the manufacturer is compelled to produce more rather than less to secure the same income; he wants therefore machinery that will produce rapidly and at the lowest cost. To do this the same economy found in the manufacture of commodities must be transferred to the creation of machines. The machines of the factory early in its history threatened to grow so large that it would have been impossible to create them by the pigmy tools of men. "Modern industry had therefore to take in hand the machine, its characteristic instrument of production, and to construct machines by machines." When it did this the industrial organization had for the first time a real technical foundation. The development of machines, created by machines, was hurried forward by the increasing demands for steamships and locomotives to carry the finished product of the factory. The growth of the machine trades in consequence has been most marked, for upon them has fallen the burden of supplying the machines, tools and equipment of the new industry.

The transition does not affect alone the type and form of the machinery, but it also touches, as pointed out by Hobson in his Evolution of Capitalism, the ownership of modern material, tools and power, and the relations between the units of labor and the place of work. In the simplest form of industry, where the worker in his cottage controls the tools, power, materials and place, the relations between the units of labor are the simplest and the organization hardly worthy of the name. The production is then limited in amount and enters a market confined

to the immediate neighborhood. The incentive to invention before the days of the factory system was the inadequate supply of yarn for which the weavers had to use various subterfuges. The methods of spinning having been improved through the invention of the spinning-jenny, the weaver fell behind and required better looms to keep up with the spinners. These were supplied in time and the spinning-jenny and looms coupled with steam went a long way toward the creation of the factory. Before this event actually took place, a modified system of the old domestic system of manufacture had been established by groups of capitalists, who were given the significant name of "putters-out." Reference has already been made to these individuals in the second chapter of the first part. By their appearance in the field of industry the material and product were taken from the weavers and retained by the capitalists, the weavers receiving a stipulated amount for their work. The tool, power and place were still in the possession of the worker. This system of distribution of material and the collection of finished product is known as "the mixed form of production."

In time the capitalist gathered a number of looms under one roof and operated them by the employment of weavers. The transition was almost complete, still the power was furnished by the worker and the machines were independent of and not dependent upon each other. When the factory system was established the materials were furnished by the capitalists, the power created by a steam-engine, the machinery made a part of the factory and the workers withdrawn from their homes and former places of working. The whole industry had in every essential passed to another control.

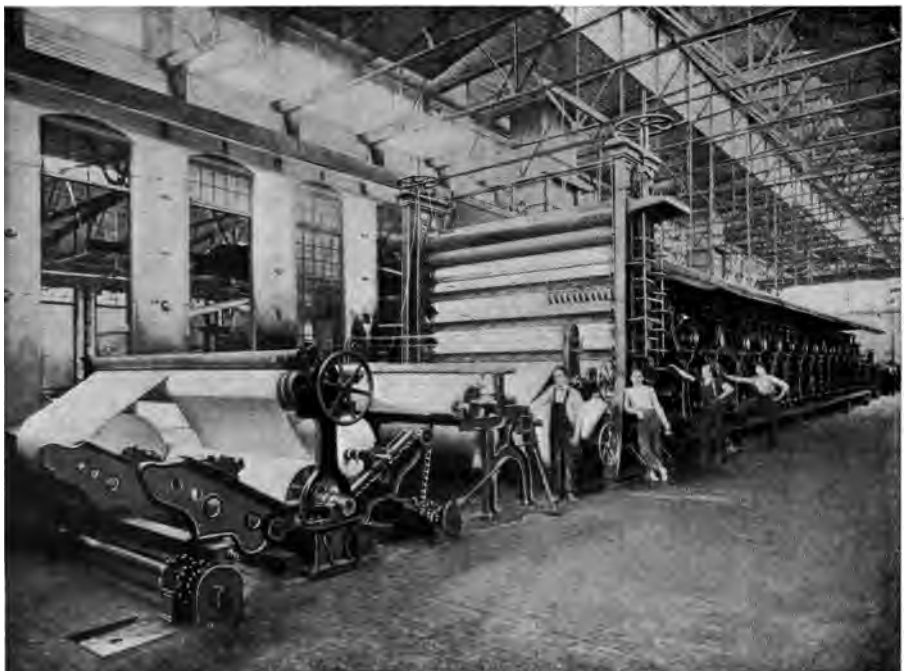
The weaver becomes in this movement a dependent, a factor, a part of a great machine system and subordinated to the machine which he tends. His interests in

production from the financial point of view are limited to the getting of wages, he is no longer a director of industry. Labor in the new scheme of production becomes in a measure of less importance than capital, and cheaper grades of workers are substituted for the skilled handicraftsman who occupied his place of producer before the days of the factory. These statements are not a denial of the benefit of a factory system, for man very materially increases his productive power by the use of machinery through the application of various mechanical devices. Manufacture in itself is essentially a wide division of labor marked off from the extractive, transporting and merchandizing industries. Such a division is seen in the rough in the earliest organization of a productive society and is always followed by an inter-industrial partition that leads to the existence of many occupations. Thus at first men engage in extracting, then manufacturing, transporting and merchandizing. The fisherman brings to the village the results of his labor, another manufactures canoes and a third transports dried fish elsewhere and begins merchandizing. The division of labor is then in its roughest form; specialization, however, makes its appearance more and more as the path of production is opened to the workers. There arises as the community grows in years independent handicraftsmen, who are the forerunners of the great industries of modern times. These men are engaged in special production that is sometimes divided into its detailed processes, which are later crystallized into the exclusive function of some individual worker.

Production is thus far what might be termed a single-handed creation of commodities. The cooperation is passive and not active, but as the population increases in numbers the artisans are grouped under one roof, each one producing as he did before in the single-handed production. Thus the manufacture is at first a combination

of different handicrafts that are in the final organization subordinated to some particular phase of the work, the product being the joint creation of the workmen. The advantage in the concentration is found in the purchase of supplies, in the avoidance of distributing of material to scattered workers and in the centralization of the product. Just the reverse to the form of manufacture spoken of above is that carried on simultaneously by a number of workers in the same shop. Each one produces the same thing until an increased demand forces a reorganization of the work and a new assignment of special tasks to each worker. Instead of each worker producing the completed product as formerly the total output is now the result of the combined efforts of the workers. "The mode in which manufactures arise," therefore, to quote Karl Marx, "is twofold. On the one hand, it arises from the union of various handicrafts, which become stripped of their independence, and specialized to such an extent as to be reduced to mere supplementary partial processes in the production of one particular commodity. On the other hand, it arises from the co-operation of artificers of one handicraft; it splits up that particular handicraft into its various detail operations, isolating and making these operations independent of each other up to the point where each becomes the exclusive function of a particular laborer. On the one hand, therefore, manufacture either introduces division of labor into a process of production, or further develops that division; on the other hand, it unites together handicrafts that were formerly separate."

In modern days what in many industries was an essential element or a distinct process in the creation of the product has been factoried. That is to say, workers have been brought in conjunction with machinery into a special building to produce some one article that was formerly manufactured in the regular course of production.



From the Twelfth United States Census.

One of the largest paper machines in the world—162 inches wide.

A carriage illustrates well the modern method of manufacturing. One factory creates hubs, another makes wheels, a third prepares axles, a fourth provides the body, another manufactures upholstery, a sixth produces the hardware and the seventh one assembles the parts and puts forth the complete product in the form of a carriage. Nor has the movement toward a more extended partition of production ceased. It is, however, accompanied by a marked tendency setting in the direction of concentration. The cotton industry in England illustrates the tendency of excessive division of industry. In that industry one factory is devoted to spinning, not only cotton thread, but oftentimes thread only of certain sizes; another factory weaves, a third sizes and prepares the cloth for the market. In America the factory would spin, weave and size the cloth; the separate factories, as in the English system, would not be established. Concentration of effort is notably a product of modern economy, so that to-day the problem is to secure the continuous production from the time the raw material is procured to the distribution of the product to the consumer. In the great United States Steel Company an excellent example of concentration presents itself to the reader. That organization mines its own ore, carries it in the company boats, unloads it at company docks, transports it by company railroad to the company plant, after manufactured sells through company agents to the consumer. Although the concentration of industry is so marked at present, there is nevertheless an increasing elimination of useless processes and the introduction of inventions and machines wherever the process of manufacture can be shortened. Such a movement demands special tools and machines in order to save time and expense in the production of machines and the handling of products. Consequently the third of the typical elements found in modern industry will refer to the special machine.

A long stride was made in factory organization when it was possible to produce machines for some special work in the manufacture of commodities. The special machine is a mechanism devoted to a continuous work. Its use demands a factory with sufficient orders to keep it constantly in operation, otherwise there is no economy in its employment. In a factory where there are many special machines the work must move with a steady progression toward completion; nothing must be allowed to stand in its way, and where work is likely to block the system special portable machines must be created to go the rounds of the work likely to break down the routine system. The benefits derived from the use of the special machine are found in the saving of time and material, lower labor cost and a larger output at a lower cost. The use of electricity in the manufacturing system introduced a wide extension of the special machine idea, for it is possible to secure a better power, and a more extended use of it, than with belting and shafting so prominent in the use of steam as a motive force. The losses from shaft transmissions are said to be thirty to fifty per cent, while the electric power transmission loses but thirty at the most, a saving in the course of a year of perhaps fifty dollars for each horse power employed. Electricity also permits the use of the singular mobility of the electric power, and the introduction of electric traction in a plant follows as a matter of course when the electric system has once been established. The days of cheap equipment are rapidly passing by and the best tools and machines are selected for the work. Every manufacturer vies with his competitors in securing the best machines that he can get. Such competition means the employment of the special machine whenever and wherever possible, for in the end it means a better product at a lower cost.

The true test for manufactures as opposed to the hand-trades is not found in the use of power, the use of machinery, production for the general market, or production

under a division of labor, but in the standardization of the process. A distinction based upon power alone would exclude a considerable number of factories from the list of manufactures. Standardization applies to all the processes which create so-called "standard products" for general demand. This demand is so strong and regular that the manufacturer can produce his commodities according to some acceptable size, form, or shape. The manufacturer of ready-made clothing standardizes his measurements and sizes and produces large quantities of goods, knowing that there is a sufficient demand for the regular sizes to take all of his product. There are occasional industries in which manufacturing is carried on in every sense of the word, but the product on account of the great expense is not standardized. An instance of this kind is found in the building of ships, parts of which are standardized, but the completed product is created in accordance with specific plans.

The object of standardization is to use a definite level of excellence at a diminished cost. The benefits from this system, for it has reached the dignity of one, are found from the point of view of the manufacturer in the items of cost, delivery and quality, and to the purchaser in stable sizes, uniform quality and quick delivery. The items of cost to the man engaged in production are the cost of materials, labor and operating expenses. These items are materially reduced where standardization is possible because of the resultant large output and the use of specially designed machines devoted to one kind of work. But what is still more to the point the manufacturer can assure his customer of quick delivery, uniform quality and sizes; while on the other hand the manufacturer is not compelled to put out as large an investment, his plant is operated to better advantage and the shop maintenance is less than in the case of special manufacture. The old plants with their invested capital are opposed to a system of standardiza-

tion, but the lowered cost in relation to the results is in complete harmony with modern economic tendencies.

The possibilities of standardization are strikingly shown in a recent international incident. The Egyptian Government desired a bridge for the Atbara at the earliest possible moment; inquiry was made of the English bridge-makers, but no promise of prompt delivery could be secured. Within twenty-seven days after the tender of the contract was made to an American firm the bridge was ready for shipment. The feat, not a remarkable one, was due to the standardization of the bridge material. This in itself was a guarantee of quick delivery and construction.

Soon after its adoption the standardization of machinery was followed by the system of interchangeable parts. Through its establishment the owners of expensive machines were able to make repairs or renew parts without difficulty. The advantages from this system have been very great and it has enabled the United States, where interchangeable parts have been widely accepted as a necessary feature of trade, to extend her trade very materially in foreign lands. In a report upon this subject an authority said the general growth of the "interchangeable system" in manufacturing has had an influence in the development of manufacturing, agricultural, and other industries which but few have hitherto appreciated. It may not be too much to say, in some respects, this system has been one of the chief influences in the rapid increase of the national wealth. Two of the great industries which constitute the basis of this wealth, agriculture and manufactures, now depend upon the existence of this remarkable feature in manufacturing, which has reached its highest development in this country. The growth of this system is due to the inventive characteristics of the people, and their peculiarity in seeking the best and most simple mechanical methods

of accomplishing results by machinery, untrammeled by traditions or hereditary habits and customs.*

In a book on the American workman the French economist, E. Lavasseur, says of the system: "What has been called the system of interchangeable mechanism, stands in intimate relation, both as cause and effect, to the progress of concentration in certain industries. Establishments using this system number and classify, by size and quality when possible, the parts of the machine they manufacture, and make them so uniform that any part is capable of being replaced by another of the same number. Under such conditions the manufacturer finds it advantageous to employ the most powerful and delicate machinery, which, being confined to a single operation, turns out its product in large quantities. The purchaser of a machine made in this way finds no difficulty in securing by correspondence a substitute for any part that gets out of order. Thanks to this system the manufacturer can produce more cheaply on the one hand, and on the other, he can enlarge his trade —two very important considerations in a country as vast as the United States. Specialization is the result of this system, which is to-day applied to almost every commodity of large consumption, from agricultural implements and steam-engines to watches and nails."

Logically the outcome of specialization is localization of industry, a condition due in the earlier days to accident, and in the present to commercial reasons. A distinction, however, is to be made between the forces of location and the influences that tend toward concentration and localization of factories at specific points. The first determine the nation and the region in which an industry may develop, the second fix the place where a group of factories is to be located. The one is general in its tendencies, the other specific. The forces of location may be enumerated as climate, natural deposits, physical position and waterways,

* Twelfth Census of United States, Manufacturers, Part I, p. lix.

and the character of people; while the concentration and localization influences are the nearness to material and market, water-power, favorable climate, a local supply of labor and capital for immediate investment.

Climate has had in the past, and has now, a wonderful influence in determining national industries. The possession of a favorable climate is a great national advantage resulting in the building up of large industries within the national boundaries. Partly on account of the requirements of a moist atmosphere in the industry of spinning fine fabrics the cotton industry has made wonderful strides in the Lancashire district of England, where there is a dampness that fits admirably into the requirements of spinning. It is stated that the advantage coming from this favorable environment is equal to seven per cent on the cost over and above the New England factories, where they are compelled to force steam into the spinning-rooms to get the proper degree of humidity. Other examples can be given of this influence, as in the instance of cigarette manufacture in Egypt. There a dry climate prevails which preserves the aroma of the tobacco perfectly; as a consequence tobacco is brought thousands of miles to the land of the Pharaohs. Abundance of ice in a northern region will influence the location of packing-houses; and the presence of natural deposits, as in the case of the oil industry, will determine the establishment of manufacturing concerns. Harbors, waterways, and transportation facilities will sometimes draw capital and labor to a promising region. Often cheap labor has a similar influence in causing the investment of capital in comparatively new commercial countries. A number of instances of this statement have been published in the public press; in these reports it appears that the cheap labor of Mexico, Japan and China is to be utilized by capitalists to manufacture various products by the aid of extensive machinery. Perhaps a still more notable influence is the character of the

people, their technical training, perseverance and skill. Thus it is said that the high intelligence of the American workman is due to the system of public instruction, and his skill to the mechanical instincts of the people and the discipline of the shops.

The concentration of industry at a specific point is due to a number of causes already enumerated as nearness to materials and market, water-power, favorable climate, a supply of labor and capital available for investment. In the days of accidental selection of location the momentum of an early choice was sometimes sufficient to centralize an industry and keep it localized until a population had grown up around the factory in such large numbers as to give a supply of labor and a market of considerable regularity. Nearness to market and material no longer means within hailing distance, but has reference to accessibility, which depends upon the transportation facilities and the character of the commodity.

In another place it was stated that the fisheries and shipping industries early supplied a capital for the New England factories. This is an instance of localization due in part to the possession of capital in a community which was used to build up manufacturing. There are many agricultural sections which, having prospered, are using their surplus to build up small factories in their neighborhood. And sometimes this is the only reason for the establishment of the factory in a specific place, although in New England the presence of water-power and an intelligent population utilizable as factory-workers were additional incentives.

The localization points of industries are selected in the first instance with some advantage in mind, but the choice is nevertheless a matter of chance, for the reason that the advantage may disappear in the changing of conditions. Factories established at competitive points for the purpose of securing better freight-rates may find that with the

Minneapolis milling district, an example of localization.

growth of other centers this advantage no longer exists. Early in the history of Minneapolis the flour-mills were erected on the banks of the Mississippi at St. Anthony Falls to make use of the water-power. For many years this was a distinct advantage, but with the increase in the number of mills and the failure of the water-supply in the Mississippi at certain times in the year the advantage in the Minneapolis flouring center is no longer based upon water-power, but upon nearness to the wheat-fields of Minnesota and Dakota and the incentive of an early establishment.

The proof of the advantage in the localization point of an industry is its success. Prosperity having come to the pioneer of the industry localization begins when his imitators follow his example and set up their factories in the same town. The very success of the first enterprise has demonstrated to his imitators that the economic conditions are favorable and a local bias toward that industry is started that draws managers, capitalists and laborers to the growing manufacturing center.* The value of an enterprising industrial center to the captain of industry is in the presence of men, with capital seeking investment, and a body of skilled workers. In the course of time some very distinct advantages emerge from the centralization of industry at geographical points. First among these may be mentioned the mobilization of skilled laborers who are often highly specialized in their crafts. This is an advantage, however, that is distinctly lessened by the extended use of machinery. The second is the development of an extensive subdivision of the processes of manufacture among employees. This point has already been referred to in the early part of the chapter. Third, there is in such a community continual improvement of machinery and

* Part I. Statistics of Manufacturers, Twelfth Census of the United States, has furnished many points for the discussion on Localization of Industry.

the adoption of new processes as soon as introduced. "As a result, new and up-to-date tools and machinery may be had in such centers with the least possible delay, and existing machinery may be kept continually in repair. The town's specialization increases its supply of specialized labor and specialized machinery. These in turn react to increase the specialization of the town. Success breeds success in almost geometrical ratio. Cause and effect propel each other in a continually expanding circle, the self-created local advantages becoming in time so powerful that they entirely neutralize the greater advantages of location which other localities may have come to possess." *

Specialization in the creation of separate industries leads to localization, and in time to still more extended and detailed specialization. When this point has been reached and the industry is concentrated in location and in the division of function, there still remains the concentration of ownership and management. This is a natural result likely to come out of the specialization, just referred to, and the excessive competition likely to take place between localized plants. The movement in the organization of concentration took two forms: one to obviate the difficulties of too much competition, and the other to secure the advantages of unified ownership and management in large production. The first became entirely a matter of organization and finance; the second, while necessarily confronted with financial problems, was fundamentally a question of economy in the use of productive agencies. The first therefore disappears from this part of the discussion while the other continues under the title of "large scale production."

Without intending to emphasize the point too strongly the distinction between production on a large scale and the combination of separate plants may again be called to the attention of the reader. The first of the terms applies to the creation of commodities with the best of machinery,

* Page ccxiv of last reference.

the largest and most thoroughly organized factories, a highly equipped labor force and efficient management. The test of such production is "low cost." Combination, on the other hand, has to do with the control of a number of plants under one management. The advantages which accrue to society are those due to the elimination of some of the managers, selling agents, and to better facilities for purchasing and handling raw materials, although much doubt may be cast on this statement. The tendency of the

Dynamo room of a modern electric plant.

latter is toward monopoly, and in the end is not likely to encourage the development of the most efficient organization. Without competition many of the economic advantages secured through combination of plants may be lost.

A group of five phrases includes all the advantages arising from the extensive production outside the pale of monopoly and combination. These are, economy in motive power and plant, economy in machinery, organization of

labor, utilization of by-products and special facilities in placing the product on the market. An examination of them in order of statement may throw light upon the development of production on a large scale.

In the erection of a plant the old geometrical rule that space increases as the cube of the dimensions applies to the building of factories, and as a result extensive wall area increases materially the capacity of the factory. A somewhat similar rule applies to engines, for fuel cost and other expenses decline per horse-power as the central automaton increases in size. There is, however, a limit to the economies resulting from the size of plants, as seen especially in the size of boilers, engines and machinery, and after the limit is reached it is necessary to equip new factories, for the economies of large scale production have virtually ceased when this point is reached. But a large concern can arrange and organize its machinery so as to receive the best possible returns from its operation. To do this requires large capital, for the growing specialization of industry is constantly adding new machines and casting out old ones. Thus a witness before the United States Industrial Commission testified that in order to build and equip a plant for the manufacture of steel and to carry on the business with the expectation of meeting all comers an investment of from $20,000,000 to $30,000,000 is required.

The arrangement of the machinery in a large steel plant is described by E. Lavasseur in his book on the American Workman as follows: " The eight blast-furnaces are arranged in two rows and built upon platforms. Each furnace is provided at the back with four blowing-engines and has a capacity of from 300 to 350 tons per day. Together with the three converters, each able to pour 2,000 tons of steel daily into the ingot molds arranged around them, they produce an imposing idea of the power of this establishment. The rolling-mill, which is about three hun-

dred feet long, produces an impression even more thrilling, because the exhibition of power is supplemented by the crash and roar of enormous machines at work. These machines take up the glowing ingots, which are longer than a man, carry them to and from the rolls, flatten them and finally draw them into sections. They are transformed into steel rails instantly, so to speak, and are then carried by tables moved on endless chains to the end of the room, where circular-saws cut them into regular lengths, with a strident grinding and a continuous shower of sparks. There are few workmen in this vast room. In the center a roller with three or four assistants directs the machinery by pressing a button. At the end of the room one sees a few laborers. The machines do everything and there is much to be done: the rolling alone requires three thousand horse-power. But they accomplish their work with ease, now giving the idea of might as the rolls exert their power, now that of grace as the cranes grasp and lift the ingots."

In successful manufacturing it is highly essential that there shall be the same co-ordination of machinery and processes as in the example given above. Such a result is only securable through the administrative genius of an executive who requires such number and character of subordinates as will fit the plan of organization. Varying grades of skill and directive power meet and touch each other in the operation of a plant. The object is to secure related steps and processes that may be operated continuously and uninterruptedly in the creation of commodities. To accomplish this demands an extensive division of labor in the work both of new and of old machines; the outcome of such specialization is the introduction in the manufacture of specialists and specialized machinery. The purpose is to ascertain the exact number of processes that will save the most time and produce the largest output. This principle Babbage expressed in these words: When the number of processes into which it is most advantageous

to divide it is ascertained, as well as the number of individuals to be employed, then all other manufacturers who do not employ a direct multiple of this number will produce the article at a greater cost.

The most striking phase of modern manufacturing is the utilization of former waste products. The competition of manufacturers for a place in the markets of the nation and of the world is becoming keener and sharper, forcing as a consequence the closest study of the possible utilization of waste materials. In Germany and England careful attention has been given to the question of by-products, but in the United States, where nature has been lavish with her resources, little attention has been given the by-product, the whole tendency having set strongly in the direction of organization and the development of machinery. The competition, however, has finally forced utilization of waste products, although the investments in old plants stand in the way of the immediate adoption of the new methods. It is stated by a writer in the Engineers' Magazine that by-product coking would mean the casting aside of thirty millions of dollars invested in the old beehive ovens; even as the industry is now conducted the by-product is six millions' worth of ammonia sulphate and five million dollars' worth of tar. The ultimate result may be the shifting of coke-making from the fuel-fields to the centers of population, where the excess gas can be used for industrial purposes.

"The tendency everywhere," says a writer in the final report of the United States Industrial Commission, "is to finds ways of utilizing rejected substances or scraps of material. Out of the residuum from the refining of petroleum a hundred valuable products are now manufactured. Cotton-seed, once chiefly wasted, is made to produce a highly useful and valuable oil. Even the utilization of tin-scraps, one of the most perplexing problems of earlier days, is now comparatively well solved. The change from

iron to steel has been from a weldable, but practically non-fusible substance, to one which may be freely and fully melted into a mass, however the character of the scrap may be varied. The re-employment of old iron which can be dissolved into the new steel mixture, or of worn-out or rejected steel of all qualities by converting it into new products, is a most important economy. These illustrations are paralleled in all departments of industry as the outcome of modern methods and inventions. Both the introduction of new products and the utilization of by-products and of wastes are direct contributions to the world's wealth."

CHAPTER IV

FORMS OF INDUSTRIAL ORGANIZATION

Outside the contribution of nature to man's welfare in an industrial society capital and labor are the most important factors in the creation of products. Consequently the forms which the two factors take on in their organization have a vital influence upon the industrial activities of the community. The two differ materially, however, in the type of organization which they assume. Capital passes gradually from the partnership through the joint-stock company and corporation to the giant combination. Its organization form is entirely industrial in character and results. On the other hand the organization of labor outside of all consideration of the division of labor, functions which already have been discussed in a previous chapter, is social in character, touching more or less directly through the adjustment of wages the regulation of the conditions of employment and the production of commodities. The form of organization which labor takes on appears in the local trade union, the national union, and the Federation of Labor unions, and sometimes in an effort to eliminate the evils of capitalistic control of industries in cooperation.

The two groups of industrial organization are constantly meeting in the every-day conduct of production. The owners of capital, whether they have organized as a partnership or a corporation, are the directors of industry controlling the purchase of materials, the use of machinery,

the employment of labor, and the sale of the output. The laborers in their organizations can only hope to affect the labor contract, the hours of employment, the wages paid, and the output of the individual worker with the increasing strength of the two factors. The tendency is to come together in a system of collective bargaining for the purpose of settling the terms of the labor contracts. The functions of a labor organization are virtually fulfilled where this has been accomplished, while the capitalistic organization has still to deal with the problems of the division of labor, machine production and the marketing of the product.

The key to the changes in the forms of capital organization is the organization for larger production. In the earlier days of industry it was held that each man in business was personally responsible for all the debts contracted by him. "But as a concern becomes larger and larger, it grows more difficult for a number of owners individually to see how it is managed. If a hundred men unite their capital in an industry they must necessarily put the control in the hands of a board of directors, and can only know by occasional reports how their business is conducted. Under these circumstances it is manifestly unjust to hold them all responsible to the extent of their whole private fortunes for mismanagement on the part of the director. . . . Under such circumstances it is quite fair to transfer a part of the responsibility for loss from the shoulders of the investor to those of the outside public. . . . Without such limit of responsibility it is practically impossible to get the necessary capital subscribed for undertakings where the investors can not exercise personal supervision." *

The demand for amounts of capital, far beyond the ability of a few individuals to furnish, forced in time the establishment of the principle above enunciated. The growing numbers of those who possessed capital, but who

* Hadley, Economics, p. 144.

had no special knowledge of trade or commerce, likewise added to the demand for a limited liability system. It was only gradually, however, that principles now found in the corporation came into being. Without going into the history of these principles the contrast between the corporation and the early forms of organization may be illustrated by the partnership and the joint-stock company. The first of the two was probably well developed by the time of Queen Elizabeth, in whose reign a rapid growth of commerce took place. It is defined as an agreement between two or more individuals to carry on a business with a view to a profit in common. In such a union each partner is the agent of the partnership and can bind the members to any contract he may choose to make. Strenuous as the measures appear to be, the law takes it for granted that the business being under their direct superintendence the partners can avoid the dangers and pitfalls of commerce. This form of organization hardly met the requirements of large production with its burdensome unlimited liability and lack of negotiable shares.

Midway between the partnership and corporation are certain forms of organization that may be regarded as mile-stones on the way to the corporate goal. Neither of them partakes of the great features of a corporation although distinctly an advance over the partnership form. The reference is to the limited partnership and the joint-stock company. The burden of an unlimited liability still stood in the way of large investments. "One of the earliest attempts to meet this need was by the partnership in commenda, where a comparatively small number of persons assumed the active management and the responsibility of the enterprise, while others simply furnished capital for the sake of a share in the profits." The limited partnership is consequently composed of two groups of partners, one which directs the business, and whose liability does not differ from the liability of ordinary partners, and the

other having no active control assumes only a liability equal to the capital invested. About this form of organization the state has hedged many restrictions which have prevented its general use. The joint-stock company—the name given to the form described—made its first appearance as an industrial organization with some of the features of the modern corporation. The capital was divided into negotiable shares, a step in advance of the partnership. The government of the company was vested in a board of directors elected by the shareholders. Thus the principles of shares and representative government were brought into use, but the unlimited liability of shareholders still remained and the investment of capital in industrial enterprise was correspondingly retarded. This was the situation in the earlier history of the joint-stock company, but beginning with 1822 in the United States the joint-stock company has been modified and changed by statute law to such a degree that it differs to-day but little from a corporation. It is no longer necessary to sue each individual member, or possible to force the burden of the debt on the wealthy members of the company. Under statute law the joint-stock company can sue or be sued in its own name, own property, conduct a business and be free from the unlimited liability of debt, though it is restrained from ever incurring an obligation larger than its capitalization.

What the corporation was to contribute to the industrial forms of organization, even beyond the principles of shares, limited liability and representative government, was a legal personality, immortal and intangible, separate and apart from the persons composing it. Though an artificial person created by law from a group of natural persons and having a continuous existence, nevertheless its powers and liabilities are different from those of its members. The powers, however, are conferred upon the organizers of a corporation either by special legislative act or by a gen-

eral statute. An individual then can not assume the form and powers of a corporation as a matter of right, for artificial bodies are created by a sovereign power as a privilege and not as a right.

The relationship between the state as a sovereign power and the incorporators is set forth in an instrument called a charter, which is a contract between the state and the incorporators, the incorporators and the stockholders and the stockholders and persons dealing with the corporation. Through the making and granting of the charter an organization is created that has a perpetual existence except when modified by statute. Its life, as in the case of a partnership, does not depend upon the existence of the persons owning the capital, which is a great factor in stimulating and continuing long business contracts. The charter also grants the right to sue and be sued, to purchase lands and hold them for the benefit of the incorporators and their successors, to have a common seal and to make by-laws for the better government of the corporation.

Finally there was evolved an organization that made it possible for a group of individuals to act as a single person without incurring personally the financial responsibility of an unlimited liability concern. The new form of organization had then a representative form of government, division of capital into shares, perpetual succession and limited liability. Under the influence of these corporate privileges the investment of capital has advanced by leaps and bounds. To investors it has offered chances of great returns without great risks, and to men of ability a rare opportunity for the exercise of their abilities, while to the public came the advantages due to a wider industrial activity incited by the use of capital centralized from many sources.

Although states and nations have provided so bountifully for the creation of corporations, nevertheless, ways were furnished for their possible dissolution. One gives

the shareholders the right to surrender the franchise, another provides for forfeiture by judicial decree if the corporation extends its activities beyond the privileges of its charter, and the third, through the power that granted the charter, may take it away by compulsory legislation although the law of the English-speaking States has thoroughly established the obligation of contracts. Such an act on the part of a State over its subject corporation would follow only after an "ultra vires" violation of the charter. In these days the most common act of this character of which a corporation is guilty, is an illegal combination to create a monopoly. These combinations of corporations brought an immense power into the hands of the directors and aroused the antagonism of states to such a degree that hostile legislation has followed, particularly in the United States, that has forced the corporations to create new forms of organization. In the organization of industry the tendency in the last quarter of the nineteenth century has been toward the elimination of excessive competition and the organization of individual producers into industrial groups under a centralized direction. In some instances, particularly that of railroad operation, the competition between groups grew so strong that it was necessary in order to maintain rates and an equitable division of the business to secure the consolidation of the hostile groups.

In securing control of a group it was first necessary for the originators to secure the acquiescence of the former competitors, and second, in order to make the control of the product complete to bring into the plan the producers engaged in manufacturing the raw material needed by the members of the combination. A notable example of the stages in group organization is seen in the causes leading up to the creation of the United States Steel Company. By 1896 there existed in the United States a number of trusts engaged in the production of special steel products. These

began to prepare not only for the manufacture of the finished articles they were already putting out, but also to make their own billets and pig-steel. The Carnegie Steel Company was then engaged in supplying the raw materials to the manufacturers of the finished products, and in order to protect itself was forced to announce that it would be compelled to produce steel tubing, tin-plate, wire and other products. The remarkable organization of the Carnegie Company gave it a great advantage in any contest it might enter, while the organizations of the individual competitors were burdened with large fixed charges and possessed no reserves. The natural wish of the promoters of consolidation was to avoid any contest with so formidable a competitor as the Carnegie Company and to create a gigantic corporation capable of controlling the entire iron and steel industry.

The type of large-scale industrial organization before 1890 was the trust, which gave the maximum of control with the minimum of financial responsibility. Through this form it was possible for a board of directors to issue trustee certificates to shareholders, guaranteeing to them a good dividend and permanent values, while the shareholders in return delegated the right to vote to the trustees. In this manner it was quite possible, as was repeatedly demonstrated, to secure the control of a number of manufacturing concerns and place them under the direction of a few individuals. But the law in the form of an anti-trust act declared this procedure illegal, and forced for one reason or another a change in the type of organization. The succeeding forms have been still more extended, resulting in centralization and very large corporations.

In many respects the centralized corporation is like the original trust form, in that the companies composing it still retain their original existence and are governed through the representatives of the promoters and the boards of directors of the different concerns. This control is se-

cured by the purchase of a majority of the stock, or possibly the entire stock, of each one of the corporations. The officers of the large corporations elect the boards of directors of the different plants and in this way hold complete control. Although the different corporations manage their separate affairs independently, they are guided by the information and the policy emanating from the central officers. The large corporation, however, has come to be the more commonly existent form, for it centralizes the control in a more marked degree than the corporation referred to above. It purchases outright the stock of the corporations which are to be absorbed, by issuing the stock of the large corporation or by the payment of cash. The affairs of the new corporation are governed by a board of directors in quite the usual way. The advantages are found in the centralization of power and the elimination of the small corporations.

As a protective measure on the part of the small corporations against possible control or absorption by a consolidation movement of the kind just described, the device of the voting-trust has been created. The object is to secure a continuous policy that can not be interrupted by the sale of shares held by individuals. The method followed is to place a majority of the stock in the hands of trustees who are given the right to vote it, while the shareholders retain for themselves the privilege of drawing dividends and making transfers. It is possible that the minority shareholders may be done some injustice by a plan of this kind, but many corporations have saved their organization by this device.

What in America, and in England to some extent, has taken the form of the large corporation has in Austria and Germany appeared in a modification of the pool.* Three purposes move the producers in these latter States, namely: the attainment of high prices, the regulation of the supply,

* Report of United States Industrial Commission, vol. xviii.

and a monopoly for each individual capitalist. The form which the pool will take depends upon the attainment of these objects. The common form is a written agreement which involves the regulation of price and output. To accomplish this the organization establishes a central selling agency with branches, which distribute the orders and establish the prices. These combinations are usually national in extent, covering the provinces and States of the Empire. The severe restrictions upon promotion and stock-watering prevent the promoter from following his calling as he is accustomed to do in the United States and England, consequently the formation of pools has come about by mutual agreement among the different producers. The propelling force has been the severe competition prevailing in the different industries. Although the professional promoter is not a factor in the organization, nevertheless some organizing agency is always an element in the organization. In most cases the banks are the promoters and their officers justify this action by calling attention to the difficulty of getting investments and the necessity of earning higher rates of interest. Often the banks are holders of large blocks of stocks and are represented on the boards of directors. In fact so far has the craze for organization gone that banks have been established for the sole purpose of financiering some new industry.

Although the large corporations in England are quite like those of America, nevertheless, there has sprung into existence there a number of combinations known as the E. J. Smith companies that differ materially from anything found in the United States or continental Europe. The object of these was the usual one of eliminating unregulated competition and securing for the members a higher rate of profit. The basis of these organizations was a profit to all, individual ownership and management of the plants in the combination. The problem was: how to give each owner the control of his plant, guarantee him a

profit and still keep sufficient control of the output to accomplish these objects. It was agreed that a certain minimum cost should be determined, and that no sales should be made below a certain percentage of the cost. By this arrangement the man who produces at the greatest cost will get a fair return upon his business. In fact every member of the combination earns a group profit, while some earn individual profits varying with their different advantages in production. The labor factor was not neglected in the organization for it was felt that price agreements could not be kept without some understanding with the workers. Consequently, an organization was formed among the working people and a contract made between the two groups. On the one side employment, good wages, and bonuses varying with profits were guaranteed, while on the other freedom from strikes, and no labor assistance to competitors were conceded. The success of the plan is indicated in the rapid organization of other industries upon a similar principle.*

Perhaps in no instance has there been such rapid consolidation of industry as in the case of the railroad systems of the United States. The forces at work in this land are such as to bring the railroad companies in the near future under a few dominating financial interests. With the late movements more than half of the railroad mileage is in the control of six of these interests. The purpose of the earlier combinations was to secure business by the extension of lines and feeders to strategic points, but to-day the acquirement of a railroad by consolidated interests may be for the reasons that the railroad touches strategic points, or owns terminal facilities. The object of the present marked tendency toward consolidation in railway organization is no longer economy of operation, but the avoidance of what was rapidly developing into group competition.

* For more detailed account see pp. 9–23, vol. xviii, of the Report of the United States Industrial Commission.

The control of the groups demanded ownership or direction of the railroads in an entire geographical section of the country. A study, then, of the methods employed in securing such control of railroad mileage should yield a number of interesting facts in industrial organization.

Of these methods five may be enumerated as those adopted at one time or another in the process of railroad consolidation. They are actual purchase, consolidation by lease, holding a majority of stock or bonds, community of interests and the creation of security companies.

(1) The actual purchase of a railroad may be accomplished in three different ways; first, by the exchange of bonds for stock, usually at an increased valuation of the stock; second, by the exchange of new bonds for the old and the retirement of the stock in the same way; and third, the purchase by cash and the ownership in fee. There are many instances when the consolidators do not wish to burden the basic company with an increase of bonded indebtedness, but nevertheless expect to get control of the property necessary to the completion of the plans. Furthermore, State authorities may object to the actual purchase of one corporation by another. (2) Both of these objections are met in consolidation by lease. Without adding to the bonded indebtedness or destroying the identity of the corporate parties to the agreement, consolidation is effected by guaranteeing a fixed return to the holders of bonds and stocks, and complete control thus secured by the guaranteeing company. Consolidation by lease requires the consent of shareholders and the directors of a corporation, but it is possible through the purchase of stock in the open market to come into the control of a sufficient amount of it to determine the policy of a road, and to get all the benefits that accrue from a lease without the financial responsibilities of the latter. (3) A railroad strong in terminal facilities and earning power can even dominate the shareholders and consequently dictate the policy of the road with but a

minority holding. As a result of this dominance many abuses creep in, where control is possible by a bare majority or a large minority holding, that often disturbs dividends and traffic arrangements of the small independent road. Independent roads have always proved a disturbing factor in the railroad situation not always controllable by the purchase of stock or the making of a lease. (4) A novel policy has been devised to secure agreement and harmony in the field of transportation. The name given to it is "community of interest," a term used to designate the representation of one railroad upon the directorate of another. "This representation, intended to affect the policy of the junior company, may represent actual control or merely a minority interest as the case may be. Its objects at the same time may vary all the way from the entire elimination of the disturbing element of a rate-cutting road to the maintenance of a harmonious railroad policy between a number of rivals."* (5) It would appear, however, that the "community of interests" just described is but a stepping-stone to a much larger and more extensive consolidation to be secured through the creation of securities companies. Such a company organized with a great capitalization would exchange its stock for the bonds and shares of the railroads to be acquired. The advantage over the "community of interest" plan is in the definite ownership and direction of the railroads consolidated in this way by those who are financially concerned.

For the capitalization of a corporation there are two bases, one, the property owned by the corporation; the other, earning capacity. Both have their advocates. The fundamental true one must always be the assets of the company; this basis is to-day regarded as old-fashioned and in the way of modern financing. The preferred stock, however, even in overcapitalized corporations, is supposed to represent tangible assets, while the common stock is cov-

* Report of United States Industrial Commission, pages 3, 4, vol. xviii.

ered by increased earning capacity, good-will, patents and trade-marks in the possession of the individual concerns who are members of the corporation.

From the point of view of organizers capitalization on earning capacity is wise because it conceals the state of the business so long as there is a normal rate of return. It lessens also the danger of popular disapproval, but, perhaps more to the purpose, a capitalization always sells at a higher rate and the fluctuations are greater, affording many opportunities for speculation. In this statement lies the real reason for overcapitalization.

If the blame for this condition of affairs is to be laid at any one's door it perhaps may fall with greatest justice upon the promoter and underwriter. These representatives of modern financiering stimulate overcapitalization by their zeal in organizing new corporations and by their methods of work. The first step made by a promoter in the creation of a new combination is to secure an option upon the plants that are to form the organization. Having done this the corporation is organized, the stock issued to owners of plants who were willing to take stock in the new enterprise, and in order to pay those who sold for cash, he finds it necessary to secure the money from some source. It is at this point the underwriter comes in. A bargain is made between the promoter and the underwriter, the latter agreeing to take so many shares of stock and to advance the money upon them. With the cash received from the underwriter the promoter pays his cash liabilities, uses part of it as a working capital, and retains part as his pay. Large inducements are held out to purchasers of shares, a bonus of common stock being given for each share of preferred that is bought. The underwriter undergoes a considerable risk in advancing the money, for he practically agrees to buy the securities, consequently his pay is large. With the stock bonuses to shareholders, large pay to the promoter and underwriter, the modern corporation

issues from its organization period highly overcapitalized.

In the preceding pages have been traced the forms of capital organization from the partnership to the gigantic corporation. We now turn to the labor factor in industry whose organization will be presented in the remaining pages of the chapter.

Without going into the history of trades-unions the reasons for their development may be presented in a sentence: the necessity of protecting the interests of the laborer in the matter of hours, wages and suitable working place by organization. The weakness of the individual workman as a bargainer in the labor market stands out in marked contrast to the corporation, company or business firm. As an organization the trade-union desires to place labor on a more equal footing with capital in the matter of bargaining. This alone is perhaps sufficient justification for the formation of the unions that now exert such a wide influence upon modern industry.

The natural order of their development has been from the local union to the national, and from that to the federation of all labor organizations. The local union is composed in two ways: one, as a society of laborers of the same craft, the other as a union of the workers engaged in a variety of trades. The first is found in the larger cities, the second in towns and villages. Running through the organization of labor are many lines of affiliation and relations. Thus the local union, composed as it is in large cities of the men of one craft, perhaps in a distinct part of the city, may be a member of the central union, allied trades-council and of a trades-assembly in addition to its membership in a national union and a federation of labor.

The central city union has the notable ambition of organizing the laborers of a municipality in the labor movement. The ideal condition of such an organization is obtained when every laborer is a member of a local union that

is affiliated with the central body. From each local union come delegates to the central city organization who meet in much the same way as the House of Representatives of Congress does, business is conducted by the same general rules, presented, referred to committees, reported upon and finally discussed before action is taken by the general body of the delegates. The object of this part of the trade-union movement is to organize, educate, and to defend the laborers. The first is accomplished by agents, the second by pamphlets, tracts, speeches and a labor press, while the third object is secured through the united labor organizations by the means of money, sympathy, and the boycott. A more powerful organization still than this great body of city workers is the allied trade-councils composed of delegates from each union representing industries that are closely related to each other, as the crafts of the carpenter, brick-mason, lather and plasterer. The object of the alliance is frankly stated to be the making of the grievances of one craft the concern of all the others in the alliance. The weapon used in such conflicts is the sympathetic strike, although the organization of the business agents ("walking delegates") of each union in a board of delegates makes possible the settlement of difficulties with greater ease than in the case where the organization is not so complete. As a usual thing, however, the allied trade-councils send delegates to the central city union.

The trades-assemblies have no such economic basis for their organization as that of the allied trades-councils. The bond which unites the members of an assembly, composed as it is of delegates of all unions, is the "unity of the working classes," while the actual economic activity is limited to the boycott. Such organizations may nevertheless have a considerable political influence by using a group of voters against a specific candidate. While the allied trades-council, the central city union and the trades-assemblies are alliances and affiliations of different organized crafts in

local communities, the national unions are territorial organizations of the local unions of the same trade. The mobility of labor in many trades actually compels the organization of national unions, for there is a wide-spread competition of workers with each other except in a few of the highly localized industries. In wide-spread industries anything like collective bargaining can only be accomplished by the existence of trade-unions national in extent. The national union aspires to unite all the local unions of its trade by organization, mutual insurance and support, financial and advisory, in times of strikes. In time, the national organization officers and committees will control the strike policy of a trade. This undoubtedly tends to reduce the number of such conflicts.

In addition to the local and national organizations of crafts and trades there have been other attempts to bring the wage-earners of a country under a single jurisdiction. Such attempts are called federations when they take a definite form. The largest and most influential of such organizations is to-day in the United States based upon the principle underlying the union of the American States. "Each trade is independently organized, not, it is conceived, by virtue of any authority emanating from the whole, but by its own independent power. Each trade organization retains its sovereign control of its internal affairs, and only joins with the others in a federal organization for the consideration of common interests and the promotion of the common good."* With the wider needs of labor organizations in view the federations desire the establishment of collective bargaining, the use of the union label and legislation favorable to the eight-hour day, factory conditions, and the restriction of the employment of women and children.

The policies of trade-unions, whether organized as local societies, allied trade-councils, or national bodies, may

* Report of the United States Industrial Commission, vol. xix, p. 798.

be roughly classed into those that, first, tend to strengthen the strategic control of individual workers in dealing with their employers, and second, the ones which attempt to secure mass settlement of trades questions. Between the two classes of unions is a great difference in the general methods followed to accomplish their ends, but of some policies it may be said that trade-unions of both types accept them.

Trade-unions that still believe in individually bargaining, as a means of settling wages, endeavor to strengthen the position of their members by limiting employment to those who are members of the union, reducing the number of apprentices, restricting the output, and conditioning the use of machinery. These smack in a large measure of medieval regulation, but the modern trade-union has largely given up such interference with production and now endeavors by what is called the " common rule " to advance the interests of its members. The " common rule " consists of the standard rate, the normal day and collective bargaining. The trade-union that follows such a policy demands the maintenance of a minimum wage and a fair day with good conditions in the shops and factories. How much more than a minimum wage shall be paid is to be determined by " collective bargaining," a system requiring for its highest development the organization of both capital and labor.

The common rule, where established, is the basis of the relations existing between employer and employee. It tends to weed out the old-fashioned and stupid firms and to introduce the newer forms of business enterprise, for under it the captain of industry must have the best workmen, the best equipped factory and the most advantageous forms of industry in order to increase the output and earn dividends. As a consequence the common minimum wage automatically improves the service, introducing inventions, and better management, and leading to the collective bar-

gaining as the means of securing the most satisfactory arrangements with workers. This device may be secured through an informal agreement between local business houses and their employees, or by written agreement extending through several years and in some instances involving workers over a wide territory. This last phase develops when the industry is national in extent and the union organized throughout the country. Many forms of conference boards are developed to carry out the principle when once accepted, which, when done, makes the unions and the employers partners in industry. When both are thoroughly organized and in agreement the features of the old medieval guild are produced in the control of the conditions of labor, the output and the sale of commodities.

Certain groups of workers do not believe that the organization of industry can be carried on under the present employers' system satisfactorily to the wage-earner, and they, in consequence, suggest a form in which the entrepreneur no longer appears, but production is carried on under the direction and effort of the laborers themselves. This is called cooperation, and since it has actually taken form and in some parts of the world made rapid progress some recognition should be accorded.

Where organizations have appeared under a cooperative principle they have taken one of three forms, sometimes known as consumers, productive and credit cooperation. Societies of consumers are established to buy and sell commodities the profits from which are to go to the members of the associations. Such organizations have been remarkably successful creating an organized market for the products made by productive societies. The early establishment of scattered and somewhat unsuccessful productive cooperative societies discredited a movement that had the unusual difficulties of lack of capital, and organization, and an uncertain market to contend with. Nearly everywhere the movement toward productive cooperation should

have succeeded the consumers' societies by as many years as it preceded it. These successful establishments of co-operative stores make a certain market, while the lack of capital has been met by the changed form of the productive part of the movement in the labor copartnership plan. This recognizes the desirability of both capital and labor and provides a system under which a "substantial and known share of the profit" goes to the laborers in addition to their wages. Every laborer also has the right to invest a part of his earnings in the stock of the concern, which gives him a vote in determining the policy and officers of the plant. The system has been widely practised in Great Britain, and had in its combined societies over $7,000,000 of capital and an annual product equal to $15,000,000 at the close of the century. In the older countries, particularly Germany, credit-banks, cooperative in type, have been created. These have, by loaning small amounts, either on personal notes or collateral, rendered a great service in bridging over difficulties in the business of small producers. Many a debt-ridden and usured community has freed itself from the toils by gathering its capital through the medium of cooperative banks.

Thus far the cooperative principle has reached but a small part of the business of the world in its organization. The corporation as a stimulus to capital investment brings the organization vast sums of money and the control over industry unequaled by any other form. Successful, too, as has been productive cooperation in its new form of labor copartnership, the trade-union still remains the dominant and prevailing factor in labor organization. These then, the corporation and trade-union, must continue to be the great forces in modern production, but cooperation may in time materially modify both the organization of capital and labor.

CHAPTER V

COMMERCIAL INSTITUTIONS

THE industry of to-day is typified by its unity. Through it run lines to every part of the world binding the whole together in a gigantic organization. This unity is shown by the growing interdependency of trades and markets, the long processes of production involving many industries and agencies and the close dependence of them upon each other. Capital in the newer forms of production becomes more and more specialized, while the speculative element in the creation of goods for future markets grows increasingly greater. From the extraction of the raw material from the earth to the disposal of the finished goods to the consumer by the retailer, there is at work a minute and highly organized machine through which passes an endless chain of commodities on their way to the final user.

The railroad, telegraph, telephone and steamship have accomplished the herculean task of widening the market. The contrast of the earlier days of a place, where tradesmen met to exchange goods, with the world-wide groups of men dealing in the staple articles of a world's market to-day brings vividly before the mind the difference not only in the field but in the machinery of modern exchange. As of old the transfer of ownership in goods and commodities takes place between individuals, sections and nations *on the* basis of division of labor. To accomplish this trans-

fer of title with the precision, judgment and efficiency necessitated by the requirements of an enlarged production demands a highly organized system of commercial institutions. The problem assumes gigantic proportions: how are the purchases of China in America to be used to pay the debts of the Yankee in England, or how is an agricultural community buying machinery from a manufacturing group to pay for its utensils with wheat when the manufacturers could by no means consume so many bushels of grain? And still in a simple, efficient way the purchases and sales of different groups and nations are set off against each other to the entire satisfaction of the producers.

Not only, however, in the field of the finished commodity market, but in the various stages of production is there a constant change of ownership from one producer to another. The lumberman buys logs from the logging company, the contractor purchases his materials from the lumber company and so on as the article advances to its finished stage. The modern system provides for a local buyer or shipper in the region of the raw material to forward the materials to the consumption centers. Sometimes the transporting agencies act in the capacity of forwarders, especially when the raw material is a staple and salable in the world's market. At the center of consumption are the receivers of the materials in the guise of commission men, warehouse owners and wholesalers, who act as regulators of the supply placed in their hands from the primary sources. By degrees the materials reach the manufacturers who produce the articles desired by the consuming public, but before the product can reach the final purchasers the distributor of the large and the retailers of the small must do their part of the work. The distributors consist of company factors, wholesale dealers, and middlemen. It is the purpose of this group to carry the manufactured product well on the way to the consumer. They are dealers and forwarders of large quantities and in a

measure take from the manufacturer the necessity of dealing with the retailer. The factor sells on commission, often turning the bills and accounts he gets to the producing company for collection; the wholesaler, on the other hand, buys direct, keeps a large stock, pays cash or short-time paper for his goods and conducts his business independently of the manufacturer. The commission man sells on orders by samples often representing no particular manufacturing company, but acting as a free-lance distributing agent. The retailer is the last distributing agent in the movement of goods, but his evolution has been the most marked of any of the commercial agents. Beginning as a peddler passing from door to door with his stock of goods he made his appearance in the days of the fair in the booth and later came to occupy a permanent location in the market-place. As population grew in density and wealth the retailer came to view as the owner of the general store, which time has evolved into the single-line business and the department store.

Many modifications have taken place in the old system of product distribution. The growth in size, capital and equipment has necessitated a somewhat different system to handle the increasing product. The change has taken place in the selling departments of the trade. Thus many manufacturing concerns have created selling departments controlling the product as far as the retailer, and in some instances, even placing the product in the hands of the final consumer. As a consequence the middleman is losing his importance and the old method of jobbing gradually eliminated as a system of distribution. With the development of selling departments in manufacturing plants, the retailer has gained in importance in those industries in which the manufacturer does not reach the final consumer in this organization. The movement just indicated is markedly represented in the concentration of retail trade in department stores. Possessing a large capital the

owners of a department store are enabled to deal with the makers of commodities and to earn in addition to the profits of a retail concern the commissions of middlemen and the interest of the bankers. The system, moreover, has the further advantage of directly checking and directing demand. With such control over production the department store tells the producer what to make, and when, and how to deliver it. With modifications of the kind described in the paragraph it is indeed a changed system of distribution that presents itself at the beginning of the twentieth century.

To rest the corner-stone of the structure upon the selling agencies without taking any thought of the new functionary, the speculator, and the extended and intricate system of credit instruments would be to lose sight of the most essential of the commercial institutions. The widened market has increased the chances of risk and possible loss in business, while the enlarged output and extended areas of sales demand instruments of exchange that will make the transfer of titles easy and efficient. The first are met by the speculator and the speculative market, the second by banks, bill brokers and exchange dealers.

Losses to industry arise from the risks due to production itself and those that come from the fluctuations of the market in the prices of raw material and finished product. The risks of production arise from the destruction of property through fire, water, and wind, the mistakes of method, miscalculation in reference to the output on the market, breakage and small product due to incompetent service, bad management, fraud and the indemnities for loss of life and limb in factory and machine production. These are borne by the individuals concerned, falling jointly upon the laborer, capitalist and entrepreneur. In a measure such losses are insurable, for they do not occur at one time neither do they fall upon a producing class, but upon members of the class. The fluctuations of the market

which have materially increased with its widened scope create continuous risks, which, unlike the hazards of production, fall upon an entire class. The group of risks connected with the production were spoken of as insurable, but the losses due to the fluctuations in price of raw material and finished product can not be so met.

A special class of men have come into the industrial world for the purpose of assuming the risks of fluctuating prices and relieving the producing agents of the uncertainty of the future. The incentive which has brought the speculator to the rescue is the fact that with every risk of loss, speculatively speaking, there is a chance to gain; for this chance the speculator is willing to assume the risk. His particular function is to localize industrial risks, relieve the producer and the consumer from the necessity of carrying large stocks by guaranteeing future supplies, and in some instances by cutting down the expenses of handling materials and products. For this he asks a payment of a net profit upon capital and upon the cost of business capacity. Whether he will receive such compensation depends upon his ability to foresee future changes in the market.

"The speculator of to-day makes his money," says President Hadley in the chapter on Speculation in his book entitled Economics, "chiefly by taking advantage of differences of price between different times, rather than between different markets. It is not so much the difference in the price of wheat in Chicago and Liverpool which furnishes the source of his profit, as the difference between its price in Chicago from month to month. If the speculator foresees a rise, he buys wheat to-day with the hope of selling it at an advance. If he foresees a fall, he contracts to make future deliveries at to-day's prices, in the hope that he can secure the means of filling those contracts at rates low enough to leave him a profit. This is the type of transaction which forms the bulk of business on all the leading exchanges of the world.

"When such speculation anticipates an actual demand, it is of great service to the community. The long time which elapses between production and consumption, between contracts and their fulfilment, makes it extremely important to have responsible men to anticipate the wants of the market and take the risks on their own shoulders." Continuing, President Hadley says: "If I wish to build a house, I ask a builder to give me an estimate of the cost. He in turn goes to dealers in lumber and other materials and asks them to tell at what price they will deliver him the goods when he wants them. In this way he knows approximately what it will cost to build the house. The lumber dealer probably contracts to deliver lumber which is not now in his possession. But if he understands his business he knows more accurately than any one else what its future price is likely to be. He habitually makes a profit by his superior knowledge; but this profit is far less than the loss which would be involved if every builder, at the time of making a contract, had to buy all the lumber he was going to want six months hence, leaving his capital (and the community's capital) unproductive for that length of time, besides being subject to the dangers of loss by fire."

Suggestive as is the example just cited, it does not, however, give a definite impression of the vastness of the system, and how dependent the speculator's function is upon the existence of a speculative market in which stocks and commodities can be sold for cash at any time for the prices prevailing on the exchange. To sell at his pleasure, to buy when he desires, are the necessary privileges of the speculator. It is only when he has such a market that the speculator can perform his functions.

It is through the sale of "futures" against raw materials that the great manufacturers offset the possible loss that may come to them as producers by the fall in the prices of their material. The system now followed protects them against the fall of price in the materials by the

speculative price received for the "futures" and against a rise by an increase in the value of the manufactured commodities. Thus it is the custom of the millers in the great flouring centers to purchase grain and store it in elevators receiving therefor grain receipts. Against this grain they sell through their brokers "futures" equal in amount to the grain purchased and stored in the elevators; meantime the production of the flour from the stored grain goes on as though the "futures" did not exist. The finished product is then sold and the wheat repurchased on the speculative markets to make deliveries against the "futures" bought at the beginning of the transaction. Settlement is made by paying the difference between the price received and the price paid for "futures." Thus the miller has protection from fluctuation of price and a guarantee of profit on his manufacturing. He has in fact insured against market risks. The risk of possible loss is taken by the speculator who buys and sells the "futures." The speculator then performs his function by adjusting the fluctuations of prices in the same market at different times. He endeavors to equalize the supply by anticipating the needs of the market. In so far as he carries out this function so far does he relieve production from the constant fluctuations of market prices and secure for it stability of profit.*

Long before the speculator was recognized as a special functionary and the speculative market developed in the modern sense there was organized the machinery of exchange by which titles of ownership are transferred. Such machinery includes a money system, banks, bill-brokers and exchange merchants, and a stock exchange, together with various credit devices necessary to the conduct of business. To classify these is to divide them into titles to property and the agents that carry on the transfers.

* For a further discussion of speculation see in particular Hadley, Economics, p. 97, and Emery, American Economic Association's Publications, *February, 1900*, p. 103.

Among the titles by which property is transferred between individuals and corporations throughout the world are gold and silver coin, government paper money, banknotes, checks, drafts and bills of exchange. These instruments must, with the exception of gold and silver, have a basis, for in no instance can the others do more than transfer title from one person to another, while the coin has the power of extinguishing debt. Consequently, we may say that money in such forms acts as the settlement basis of commercial obligations. That is, the great mass of credit instruments must have a basis of solvency if it is to act as circulating medium. The presence of a true money in a community furnishes such a basis by granting to the skeptic the option of money or the credit instrument, a choice which materially stimulates the extensive use of credit instruments. The fact that a metal serving as a money settles the final balances between individuals of the same industrial group, different groups of the same nation, and different countries of the world, is equivalent to its being used in paying every debt incurred in and between these different groups and nations. Moving as it does in such settlements, the metal money measures the value of every commodity as it passes through the gates of trade and commerce. It must therefore act in the large capacity of a reserve of "commercial obligations."

Fundamentally, however, credit itself must rest upon a still wider foundation than that of the reserve used to make final settlements of commercial obligations. The obligations arise and have their existence in the exchange of goods, but only through the possibility of the exchange of goods against goods is the community able to grant present goods for future payment. In other words, its power of payment depends largely upon the possession of capital which is or will be in its hands. Credit thus comes to be the means by which specific forms of goods are changed into a general command over goods. As the greater num-

ber of transactions are made on a credit basis money plays but a minor part in the great field of commerce, that part being, as already suggested, the reserve against demands for the exchange of goods against money, as in a time of panic, instead of goods against goods as seen in the ordinary movement of trade.

Outside of government money, banks are the agents through which the titles to property known as notes, checks, drafts and bills of exchange are issued. A definition which includes this conception of a bank is that a bank is an institution which buys and sells titles to capital. Without the bank the titles accompanying every sale and transaction could not be passed from debtor to creditor, from seller to buyer. "Every exchange of property," to quote the words of another, "is accompanied by two papers: one is given by the seller to the buyer, which is a certificate that the property described in it has passed from the possession of the seller to that of the buyer, and is called a bill of sale, which vests the title to the property in the buyer, the other is given by the buyer to the seller, and is a title to an equal amount of the property of the buyer, or some other party, and is called note, draft, check, bank-note, etc., as the case might be." * The transaction between the parties is then completed, but the bank now enters as a factor and makes it possible for the seller to secure the return to which he is entitled. The bank, then, bridges over the gaps in production, which in the modern industrial organization are more numerous and shorter in time than under a less organized régime. It further collects titles to the capital of the community, permitting, in the judgment of the managers, the most deserving to use them. The basis of such credits is the goods of the community; the credits which are created by their production are bartered and set off against each other through the agency of the banker. The balances thus created are paid in money.

* *Walker*, J. H., Money, Trade and Banking, p. 34.

In performing its duties in the industrial organization a bank may carry on three functions known as those of deposit, loan and discount and issue. To begin business a commercial bank must have some capital, but the great function of a bank would be but poorly performed if a large fund of credits was not forthcoming for the use of producers and traders. Consequently a bank receives titles to capital in the form of gold and silver coin, paper money,

The Bank of England, London.

bank-notes, checks and drafts for safe keeping, which, in addition to its own power of extending credits on the basis of goods, permits it to grant loans and discounts to those who can give satisfactory evidence of the ownership of the titles to capital. Two kinds of deposits are thus created: one due to the placing with the bank money and demand obligations upon other banks, and the other brought ab-

by the making of a book credit through the discount of commercial paper. Through this latter process goods in the hands of the manufacturer, or those sold to a merchant, but not paid for, may serve as the basis of credit; the bank in that case extending to the borrower the right to demand payment at once. Thus a special form of property has been changed into a right to demand a general title to property.

Against the deposit created by a book credit, or otherwise, the holder may draw demand paper upon it called checks, or if he wishes to make payment in a distant city or foreign land he may buy with his check or part of his deposit a draft upon banks elsewhere. The draft becomes by this purchase a direct obligation of the bank and in consequence has a wider circulation and acceptance than the personal check of the depositor. In some communities, however, the bank credit system has not been developed and the people demand, instead of the check system, the direct obligation of the bank in the form of notes. So far as banks are permitted to issue notes this form of bank credit meets the requirements of a community, but they do not possess the great merit found in the expansion and contraction of deposit accounts. In their essence both checks and notes are direct obligations of the banks and must be paid upon demand. The bank is, then, forced to stand ready to pay these demands in money, the option resting with the holder of the note or check. In consequence the banker must keep on hand a sum of actual money that will in his judgment meet the demands for money. This is called the banker's reserve. It matters but little to the bank whether the seller of commercial paper or the borrower of a loan receives a book credit or a payment in the notes of the bank. The option ought to rest with the customer. In the large centers the matter has been settled in the acceptance of the book credit, which meets the wants of the commercial world better than the notes.

"Under every system of banking, whether that in which the reserve is kept in many banks, or one in which it is kept in a single bank only, there will always be a class of persons who examine more carefully than the busy bankers can the nature of different securities (which are the evidences of titles to capital upon which loans and discounts are made); and who, by attending to only one class, come to be particularly well acquainted with that class. And as these specially qualified dealers can for the most part lend much more than their capital, they will always be ready to borrow largely from bankers and others, and to deposit the securities which they know to be good as a pledge for the loan. They act thus as the intermediaries between the borrowing public and the less qualified capitalists; knowing better than the ordinary capitalist which loans are better and which are worse, they borrow from him, and gain a profit by charging to the public more than they pay to him."* The bill-broker thus supplements the work of the banks and makes it possible for many firms to dispose of their commercial paper at all times without waiting upon the discount committee of the bank. The business of buying and selling commercial paper requires a wide knowledge of business conditions and the standing of commercial houses in order to carry on the work required of that business. The function fulfilled is not that simply of buying and selling paper in a single city, but the larger broker acts as a distributor of capital. In doing this the broker receives money from country banks to buy paper for them at a discount, from other sections come bills offered for discount. It does not always happen that the two movements coincide, so that the broker finds it necessary to send the bills to other cities in order to sell all the paper entrusted to him. The system now pretty well established, in which the country banks deposit their reserves and surpluses in large cities, receiving upon them

* Bagehot, Lombard Street, p. 281.

a small interest, tends to restrict the work of the bill-broker to the larger cities; nevertheless the function filled by him is an important one in the circulation and distribution of titles to capital.

The wide distribution of banks over an extended area demands facilities that will unify the banking organizations and make easy the exchange of checks, drafts and bills of exchange arising from the continuous flow of products from one region to another. This was found to be particularly true in the large cities, where the constant acceptance of bank instruments drawn upon various banks required some clearance system. To cooperate in the settlement of the amounts credited and debited against each other in a city was only a question of time. So there has appeared in the larger industrial centers throughout the world an organization known as the clearing-house. Meeting at a central place the banks of a city have brought to it their claims against each other and settle them by paying the differences. In this simple plan the clearing-house officers act as the directors of the clearings and trustees of the moneys in their hands during the brief period of payment of balances. During a single year the clearings in the New York association amount to hundreds of billions of dollars; the actual payment of money to meet the balances is but a small part, about four per cent, of the actual transactions. The saving in time and money to the community where such an organization exists is very great. The work of the organization is by no means limited to the clearing of balances between members, for it is rare that all the banks of a city are members of the association, but they are permitted to clear through banks that are members; out-of-town banks which have correspondents in cities where clearing-house associations exist, have their checks and drafts brought for settlement to the clearing-house. The result of this widely extended clearing system is to materially facilitate the movement of

goods and the settlement of debts and obligations. In times of financial disturbance the clearing-house associations have materially aided in calming the public mind by the system of combined reserves. During such a period

The New York Clearing-house.

there is a great temptation for the strong banks to cut down their loans and discounts and hold their reserve intact, but a panic may be precipitated by the failure of the weaker banks. By combining the reserves, placing them

under the control of a committee and issuing what are called loan certificates against securities, the association provides a means by which balances can be paid and the cash reserves of the banks saved for emergencies. The effective work of this plan in the United States is exemplified in the experiences in the years 1861, 1884 and 1893.

The mutual indebtedness of commercial centers due to the constant flow of goods between them gives rise to bills of exchange as a method of balancing these obligations. Thus at each business center are created debts and credits due to the commerce and trade of the community. Bills are offered by those who have manufactured commodities and have sold them, and purchased by those who have payments to make in other cities. A market for exchange bills is created and with it comes the exchange broker who buys and sells exchange. In many instances the banks purchase exchange bills, creating in a domestic or foreign city a credit against which they sell drafts payable out of the credit secured through the bills of exchange. Usually the bank sends a bill of exchange which has been purchased to its correspondent for collection and as already stated exhausting the credit by the sale of drafts. In the evolutionary process constantly at work in the market the banks have come to be investors in bills of exchange, holding them until maturity and earning thereby the interest. The bill-broker appears as a go-between in the relations of drawers of bills and the purchasers of them. The purchase and sale of these instruments rest upon the exchange of commodities between communities and nations, the international trade in securities, the issue of travelers' checks and bank drafts.

At times unusual conditions, such as currency changes, overproduction of metals, great financial transactions, illustrated in the purchase of the Panama Canal franchise, commercial crises and heavy crop movements change the

character of the exchange movement. The only reason that the instrument rather than the money is used to settle the debts of communities against each other is because the latter is more expensive, adding to the cost insurance, freight and loss of interest. There are, however, times when the demands for exchange are greater than the supply and the price then goes up to the point where it will be cheaper to ship the currency in the case of domestic exchange or gold in the case of foreign exchange. A result of this kind is due to what is called an adverse balance of trade. Such conditions may be traced to a decline in exports due to increasing prices, a rise in imports for the same reason, or the existence of a permanent international obligation in the form of payment for freights, insurance, dividends, interest or travelers' expenses. The settlement of international debt in its final form must be through the transfer of goods, for the bills of exchange and drafts are evidences of ownership alone and are used by individuals in the payment of personal obligations.

As a result of the rise of the corporation and its enlargement, the combination, vast amounts of securities in the form of stocks and bonds have been placed upon the market for sale. With the growing importance of these industrial organizations exchanges have been developed to facilitate dealings in securities. The trading in such forms of property has become international and materially affects at times the foreign exchange between nations, and at others produces in the domestic market influences that go a long way toward changing financial conditions. To pass by so potent a factor as the stock market and its machinery would be to overlook an important element in the system of exchanges.

A stock exchange is an organization of individuals formed for the purpose of listing securities and for facilitating the sale and delivery of stocks. It has been termed a place where incomes are bought and sold; in fact, it

may be regarded as the barometer which tells the investor the values of stocks and bonds. Through its agency corporations are enabled to sell their shares and to get the money capital to conduct their business, and individuals possessing such evidences of ownership may on the other hand turn them into cash whenever it is necessary in their judgment to do so. Nearly all the great industries are now conducted by corporations and companies, so that their shares constitute one of the most important forms of investment. The stock exchange has come into existence because of a demand for trade facilities that will adjust differences of opinion in reference to future values of corporation securities and give the purchaser some idea of values.

The passage of a stock or bond from its issue to its final purchase by an investor is a long and stormy one. There appears first the promoter who organizes the company, then the banker who provides some money for expenses, the corporation and underwriting syndicate follow before the incorporation. When this stage is reached the stock certificates are issued and the sale begins on the "curb," followed later by the listing of the stock on the exchange. The stock-broker buys the securities and in order to extend his business hypothecates them at a bank for loans and finally through the agency of the broker the security finds a resting place in the strong-box of the investor, to reappear, however, when the market price rises. In these transactions the bank and the clearing-house perform important functions. Without the aid of the former a broker would be limited in his transactions to his own resources, but through the extension of temporary credit to him by a bank he is enabled to materially expand his business. This is done by over-certification of checks and the granting of call-loans on securities. In the second place, the clearing-house now organized to facilitate the transfer of stocks, increases the power of the broker to do a large business

with his capital by offsetting debts and credits created by the purchase and sale of securities against each other. The settlement is made by the payment of balances in stocks and money.

The trade in securities has become world-wide largely through arbitrage and foreign selling. Men are now engaged in buying and selling the same securities upon different exchanges at practically the same time. The purchase and sale of stocks by foreigners has greatly increased. Such transactions create national credits or debts and affect the foreign exchange-rate. In final settlement gold moves from one land to another.

From this and other points referred to in the course of this chapter it appears that the civilized world is dovetailed and linked by the vast system of exchanges now existent. To further facilitate it man has resorted to a variety of ingenious devices that have materially enlarged the field and functions of the market.*

Despite the elaborate exchange system now in vogue disturbances are constantly occurring in the market that threaten the whole industrial structure. In the great overproduction and contraction of credit the banks fail to bridge the gaps between the different stages in production. The speculator foregoes for a time the exercise of his function and great difficulty is experienced in balancing the products of region against region. Sudden or severe contraction of credit creates a flurry in Wall Street, loans on call are asked for and vast amounts of stocks are thrown on the market for sale. As the public confidence declines men seek to secure themselves against loss by turning their goods into money, interest rates for money increase under the growing demand for that commodity, there results a fall in prices with consequent failure to meet obligations based upon the old prices, wages decline and employment

* For wider information on the machinery of the speculative market the reader should see Pratt's Wall Street.

of workers is affected. Then comes a period of readjustment to the new conditions and the entrance upon another cycle of trade and expansion.

Aside from ignorance of changes in the costs of production of money metals, these disturbances are due in part to what is being done in the great industrial organism, to the narrowing of the spheres of activity and the constant shifting of demand through fashion, purchasing power and industrial conditions. Specialization affects the number of producers and changes their relations to the market and the producing world. But perhaps the principal reason these industrial crises come and go is that the machinery of management has not grown equally with the technique of production. To-day the basis of business is largely guesses as to what will happen. It is small wonder then that misdirected production results and that the whole basis of the credit system is deranged by changing its basis through overproduction. The betterment of the situation calls for wider knowledge of the institutions of exchange. Mobility of capital has been secured through banks, bill-brokers and the use of credit instruments, while the capital itself has been materially increased through advantageous systems of exchange, but the individual producer lacks any comprehensive view of the market and exchange relations. It is here that future commercial institutions will be strengthened by wider knowledge and a greater dissemination of information about market conditions. Then production and wants will more nearly correspond, and the extension of credits, no longer out of joint with needs of the time, will not disturb market conditions.

PART III

ADMINISTRATION

CHAPTER I

FUNDAMENTAL QUESTIONS

At every stage of its history an industrial organization is forced by the conditions of existence to meet problems of a serious nature. These are the outcome of its evolution, of the adjustment of new methods to the old, or the elimination of the old by the newer ways. A dynamic society is the scene of a continual warfare between the advocates of different forms of industry and government, of sections whose interests for the time being conflict, of laborers, of employers, of all, in fact, who seek advantage, advancement or the retardation of change.

It matters not how far the state may have advanced in its industrial and political organization, problems continue to press for solution. Thus the steam-engine drives out the hand-loom and the stage-coach, the electric motor supersedes the foot-power of earlier days, the typewriter modifies the character of business, the elevator system of grain storage breaks up the older methods of handling wheat, the telephone and telegraph revolutionize communication, the trust reorganizes production and the trade-union affects the character of labor. Incoming hordes of people from foreign shores change the national and racial ideals in the process of amalgamation. New notions of class relations and governmental functions are introduced. The native population undergoes a gradual alteration in character and habits, and the centers of population are shifted in their relation to industry. Government is al-

tered in form and efficiency by changing conditions. The whole is a seething mass of striving individuals and groups whose struggles obey economic and political laws that slowly form and direct the evolution going on in the industrial state.

In this strife individuals and even groups are at times seriously affected in their wealth, organization, and social relations. Railroad managers make or destroy the industry of a town by a change of rates; a trust shuts up a plant and throws men out of employment; strings of banks control the credit of a district; agreements, combinations and pools all in their very nature tend to injure some one through manipulations of price, control of raw materials and limitation of product.

It is a great problem that confronts the state. How, with all of the elements involved in its organization, can the state unify these industrial forces, subordinate some, elevate others, and at the same time render justice and continue its industrial progress without serious interruption? It involves the mixture of classes, institutions and forms of organization. The problem touches class distinctions founded on the possession of capital and the existence of a free body of life-long wage-earners. Property and contract further complicate the matter; the organization of capital in corporation, trust and combination, and of labor in the trade-union, make it a question of the relation of groups and masses. The individual plays but an unimportant part except as a member of a group. The tendency toward this form of organization increases the difficulties confronting the state. The change from individual to group requires a strongly organized power to make the adjustments satisfactory to the state and the individual. In the absence of any organization of public opinion outside the state the individual is forced to look to it (the state) for the regulation of industry.

The completeness of the national organization in which

the revolution takes place rests upon the cooperation of the industrial forces within its confines. To a foreigner the greatness of a people is measured by armies, navies, foreign trade, miles of railroads, industrial capital and annual product, but its weakness is indicated by class strife, industrial war, disorder and the absence of state authority. Some conflict must take place in every advancing state, but if it is of such a nature as to strain the structure, the state is weak, even though for the time being great when measured by the figures of standing armies, many vessels and large population.

The very organization of a people industrially and politically must result in some disturbances in the balance of industrial forces within the state and outside in the international relations with other states. The increasing activities of nations in every direction, the purchase of armaments, the widening of foreign commerce, the enlargement of the territorial basis no longer sufficient for an expanding population, are certain to bring nations into competition and sometimes into war to secure what is regarded as necessary to national existence. This development follows in the main the line of growing population, expansion of territory, nationalism, militarism and imperialism. When dominated by such a spirit the nation becomes aggressive and warlike, seeking an extension of markets through colonization, establishment of protectorates and the making of treaties.

These activities confuse rather than clarify the actual problem. It is the domestic not the foreign difficulties that are of the greatest importance in the welfare of the state. The matter of a foreign trade policy, though important, is by no means so necessary a question for solution as the relations of employers and laborers, of large and small producers, of manufacturers and consumers, of corporations and the state, of citizens and a citizenship influenced by commercialism; for these vitally touch the ac

foundation of the state. The problem is, then, a domestic one, and the most difficult in those states where democracy exists as a political agency.

The foundation stones of the modern industrial society are private property in land, private property in the results of labor, private ownership of capital, and the right of contract. These are the growth of many years. Private property in land comes from the right to use the earth, whether it rests on a royal patent, deed from the state or mere occupation. The application of labor to land is the origin of wealth, which, saved and used, becomes capital. The freedom of the worker to exercise his skill as he sees fit gives him a property interest in its results. To these rights another has been added, the freedom of contract, which permits the owner of capital or labor to refuse or accept the conditions of employment of labor or capital. In both cases there is freedom of movement from place to place and from industry to industry. The latter, however, has little or no value to the owner of labor alone, for the requirements of modern production are so great in capital and organization that he is not able to meet them. Capital and labor, under freedom of contract, possess a right to combination, which is always limited by the rights of others; but which, nevertheless, with the failure of competition and the necessity of organization, becomes an important heritage, particularly for the worker.

With these privileges in their possession men find themselves in an industrial organization which has been built up through the workings of many forces. Only perhaps within a century have industrial affairs been directed on the basis of the four great institutions referred to in the paragraph above. Private property in land is a time-honored institution; the same is much less true of capital and still more true of labor, while freedom of contract in its full meaning has been granted only within a century. Under the last a member of society has the privilege to

undertake any industrial enterprise. If he is successful society pays him a reward, if he fails the loss falls upon him alone. By the test of the survival-of-the-fittest principle the organization receives the services of the strongest. The struggle within the group continues with unabated vigor, but through the medium of the conflict leaders are constantly developed who tend to establish a higher standard of work and life. In the course of time the evils that arise in such a society are eliminated by the force of economic law.

An ardent advocate of individualism* says: "The modern industrial system is a great social cooperation. It is automatic and instinctive in its operation. The adjustments of the organs take place naturally. The parties are held together by impersonal force—supply and demand. They may never see each other; they may be separated by half the circumference of the globe. Their cooperation in the social effort is combined and distributed again by financial machinery, and the rights and the interests are measured and satisfied without any special treaty or convention at all. All this goes on so smoothly and naturally that we forget to notice it. We think that it costs nothing —does it as it were. The truth is, that this great cooperative effort is one of the greatest products of civilization—one of its costliest products and highest refinements, because here, more than anywhere else, intelligence comes in, but intelligence so clear and correct that it does not need expression.

"Now by the great social organization the whole civilized body (and soon we shall say the whole human race) keeps up a combined assault upon nature for the means of subsistence. Civilized society may be said to be maintained in an unnatural position, at an elevation above the earth, or above the natural state of society. It can be maintained there only by an efficient organization of the

* W. G. Sumner, What Social Classes Owe to Each O'

social effort and by capital. At its elevation it supports far greater numbers than it could support at any lower stage. Members of the society who come into it as it is to-day can live only by entering into the organization. If numbers increase the organization must be perfected, and capital must increase—i. e., power over nature. If the society does not keep up its power, if it lowers its organization or wastes its capital, it falls back toward the natural stage of barbarism from which it arose, and in so doing it must sacrifice thousands of its weakest members. Hence human society lives at a constant strain forward and upward, and those who are most interested that this strain be successfully kept up, that the social organization be perfected, and that capital be increased, are those at the bottom."

In no sense is society a man-made organization; it is evolved and automatic. Sometimes the great forces which have formed it act detrimentally to the immediate welfare of society and great inequalities come out of its workings. This is instanced in the wrongful production of landless men and an increasing proletariat. All of these become in the passage of time more and more important factors in the problem. The present form of industrial organization, for example, makes for greater inequalities of income, social position and industrial power. Thus it becomes seemingly impossible to rely upon individual action for all social benefits.

It is likewise increasingly clear, then, that there are two fields of activity, one the field of "some of us," the other the field of "all of us." The first is the field of voluntary activity in which individuals pursue their own interests, competing with each other for supremacy in rank, honor, and wealth. The second is the field in which the compulsory activity of government works. The increasing enlargement of the function of the state is directly due to the recognition of the important fact that the inter-

ests of the individual when fighting under a competitive régime are not synonymous with those of the community. It was but natural that in the early days our institutions should contemplate the harmonious action of competitive interests. As the industrial life has grown in complexity the corporation has been exalted as an economic expedient. This powerful economic person was not contemplated by our earlier institutions. These new economic institutions refuse to obey the general will; government in consequence is strengthened until able to enforce obedience. In fact, the growth of this organization belonging to some of us threatens to dominate the organized body of "all of us." This is one example of the difficulty.

It was thought and long taught that the one great field in governmental and industrial activities was to be found in the voluntary activity of individuals. What was most for the interests of the individual is for the interests of other people, and what is further of importance, it is possible for the individual to know his interests by the coincidence of his interests with those of other people. This is the germ of the competitive system. Under it men come to identify interest with class possessions, and class feelings test the use of their property. In a democracy men climb above the level and in a monarchy push up even into the titled society by the force of wealth. The instinct of accumulation bids them multiply their means of production without consideration of the human elements involved. Thus high and quick profits stimulate the employment of cheap labor at high pressure during the boom period, while the depression forms a reserve army of the unemployed. The advancement of personal interests goes hand in hand with the flooding of markets with goods, excessive numbers of establishments, reserve armies of laborers, wide diversion of capital, strikes and lockouts and immoderate competition, leading in the end, as a natural result, to the trust and trade-union.

In a competitive society the margin of profits is forced lower and lower as the conflict of contending interests goes on. It becomes a game of industrial war in its unmodified form in which the best fitted to survive reaches the top. Best fitted to survive does not mean the best manufacturer, the kindest employer, but the man who will take every advantage of the game. It is in fact the survival of the least moral man, who, setting the pace, establishes the business ethics of an entire industry. His competitors in order to keep their profits are compelled to adopt his methods, although in time dishonest practices bring their results; nevertheless this is but scant satisfaction to the man crowded to the wall while adhering to honest methods. The results of the system have been disastrous, as the wreckage along the line of the industrial march so eloquently testifies. They have in fact affected the minds of competitors to such an extent that some of the more barbarous methods have been abandoned. Moral opinions have served as a check, but the state has been forced to modify the inequalities by factory acts, shorter hours of labor, the prohibition of adulteration and the insistence upon sanitary conditions. The situation raises the question as to whether we can carry on production and distribution by the unfettered freedom of individuals.

The present excessive conditions in our own land and in less degree in England were the results of early conditions which tended to produce competition. The principles of legislation then prevailing encouraged the organization of associations which were to compete with each other in the industrial field. Checks to monopoly were meager and inadequate and when broken down, as soon they were, left the state unprepared to deal with the problems. The corporations when confronted by legislation fell back on their chartered rights and were strongly intrenched in the law before the attack upon them began. This unpreparedness on the part of the state was more noticeable in Amer-

ica than anywhere else. In England the Government was strong and took the problem in hand at a comparatively early date. In Germany industry and government action have been so closely linked that little movement away from general interests and national policy can be made without attracting the attention of the state. The suffocation of the small industries by the larger ones in all these states has concentrated, with the aid of inventions, the power over nature in the hands of a small group of proprietors.

The outcome of competition was inevitable. Self-interest brought in its train that immoderate organization of industry which is so markedly manifest at the present time and which has so intensified the struggle. There has also appeared an overproduction of commodities, partly due to methods of production and partly to the system of exchange, a wastefulness of competition and a depression due to overproduction. The opposing force of self-interest manifested itself in the trust organization, which was expected to eliminate competition and secure the economies of production to the group of industrial directors. Among the workers much the same difficulties appeared. Men were without employment, low wages and irregular work at times intensified the situation. Would it be possible to organize a group that could limit the number of workers, a group capable of excluding the weakest and most unskilled from the machine industries, that should in fact not only restrict the competition in the labor groups, but also determine in some measure at least the conditions of employment and the use of machinery? Such organizations have made their appearance in the form of the trade-union. Their importance and power have grown with the increasing complication of industry. Like the trust they are formed to stay the ravages of competition.

The basis of all social movement is the desire for equality; not equality of social position or material possessions,

but rather equality of opportunity. The whole system of modern industry in seeking the cheapest forms of production breaks down any equality of opportunity that may now exist and hampers the people in the lower stages of industry. The advantage of the present is largely to those who possess capital. The requirements of production in machinery, buildings and equipment are so great that the owners of small sums of capital find it difficult to do more than loan their savings to a rich man already engaged in the field of industry. The inequality of opportunity is again emphasized in the power of monopolistic concerns, through overcapitalization, special privileges, rebates, concessions and political intrigue, to draw away from the people larger returns than are their due. In so far as wealth makes for wealth, and machinery for increasing profits, inequalities are intensified in a modern society. Results due to the proper use of wealth and the ownership of machinery do not interfere with opportunity except where fortified by special privilege or concession. Meantime the unearned increment, not of land only, but of profits and interest, brings returns to the holder under the system of private property. So long as these owners carry out the function ascribed to them and accept in its full their burden society has no real grievance. The complaint, however, is of shifting responsibility of personal wealth without responsibility, of property acquired without adequate return, which causes President Hadley to cry out: "If business men are not controlled by commercial ethics—ethics fitting the conditions of to-day, rather than those of five centuries ago—they must expect to be controlled by something else. If they will not accept the full measure of responsibility which goes with their industrial power, they must expect to be deprived of responsibility and power together, by a popular movement in the direction of socialism. Such a movement is being aided and countenanced by every financier whose interests in the stock market leads

him to forget the interests of his properties, by every lawyer who teaches his clients to evade the responsibilities attaching to wealth, by every man who in the excitement of speculation loses sight of those responsibilities—by every one, in short, who forgets that under the existing system the possession of money involves a public trust, with whose fulfilment or non-fulfilment that system must stand or fall." *

To the worst tendencies of the competitive system are opposed the influences of family, religion, patriotism and class spirit. The very existence of the family means love and sacrifice, yet the demands of families for social recognition may be the stimulant which drives men to the evil practices of the competitive system. Religion touches but few to the point of restricting methods of wealth-getting and patriotism has not yet taken the form of producing wealth under the best conditions. Class spirit means emulation of the leading characters in the group, and as already shown men are not always free agents in the choice of means. Each of these influences may bring forth ideals, but they seldom take a form positive enough to actually direct the action of large groups. The power of discipline through these ideals is not yet great enough to hold excesses in check. Other counteracting forces, strong, but not all sufficient, are universal suffrage, organization of labor force and the use of it in strikes. The first of these presupposes a state which by government action can through the rule of the majority exert a restraining influence upon industry, the other two are still in the realm of the competitive field and depend for their action upon the union of individuals against other industrial groups with whom they are not in agreement. In any event the forces and influences here enumerated do not meet the difficulties of the problem. Men still seek equality.

They propose to level the chances of getting ahead by

* Hadley, Economics, p. 120.

the means of the trade-union, by a system of cooperation or by socialism.

Even in the field of labor equality does not exist despite the notion of "free economic beings." By circumstances, such as want of food, suffering families, and the many ills which flesh is heir to, some laborers are forced to underbid those who perhaps are more able to do the work, but who are not willing to do it so cheaply. This means anarchy of labor. Competition does not stop here. The laborer must bargain with the employer. The latter stands as the embodiment of the purchasing side of the market. Every day that passes decreases the capital of the laborer by just that much. His capital is time. Lack of employment means the slow dwindling of resources and savings. The employer can wait, if necessary, without any special inconvenience to himself. He has sufficient funds to tide him over until an increase in the business or the distress of the employees brings an adjustment. The laborer is not in such a position. The extended use of machinery has made his living in many ways more precarious than it was, and he is more dependent upon the moves of the employer. New inventions, revolutionizing methods of production, fall upon him temporarily, it is true, but nevertheless at times heavily. Superior forces have him at their mercy and with these he finds it difficult to cope. His power to adapt himself to these new conditions does not grow with their change. Machinery increases the possibilities of change in the displacement of cheaper men by better ones in one kind of industry, and the better men by cheaper ones in others. In the last case the high-grade men sink to the level of the new scale of wages and work established by the cheaper men. These influences create an increasing proletariat who, being mobilized in large centers, soon break their ties of village and family.

The alternative open to the proletariat in the attempt to better conditions is one of the three movements: trade-

union organization, cooperation, or workingmen's parties. In the first and third there is some recognition of the necessity of political effort to secure economic legislation. The trade-union hopes to modify present conditions by political action, but at the same time to make their own wage compact without interference by state authority; on the other hand the workingmen's parties aim to control, not to influence, government action. The trade-union disciplines and educates, but does not include the weakest and poorest paid workers. The political party raises the hopes of all and promises benefits to all. Trade-unionism drifts toward a democratic program, the workingmen's party toward socialism. The prevalence of one over the other rests upon the making of a proletariat. If modern industrial conditions produce an increasing number of low-grade workers the general people's party is not likely to be democratic but socialistic.

Some evidences of the future are to be seen in the experiences of modern lands. In England the trade-union movement is a powerful factor in the industrial and political world. The great trades have been organized thoroughly and in their organization the men are placed on an equal footing with their corporate employers. Among the lower grades of unskilled workers the union has made its appearance. In fact, the labor organizations of England hold an important position dictating the conditions of employment. So long as this is true the workingmen's party does not assume an independent position, but remains in alliance with the trade-union. In Germany a survival of the old guild form has been introduced by the Government, but the workingmen's party grows increasingly socialistic with the suppression of the small industries and the introduction of machinery. America has both a labor party and trade-unions; at times allied, at others markedly hostile to each other. The trade-union dominates the labor movement. Hope exists in the minds of most workers that the present

system can be modified by organization with occasional aid from state authority. Men look askance at socialism and cling to individualism, somewhat modified, but retaining the initiative and directive power that are supposed to exist in the competitive system.

The trade-union hopes to strengthen the strategic position of individual workers and by organization to take the function of bargaining out of the hands of the single worker. The first of these objects is to be accomplished by building up a vested interest in an advantageous means of livelihood, to limit output, regulate apprentices, determine the conditions for the introduction of machinery and to enlarge the membership. "A vested interest in an advantageous means of livelihood" brings to the discussion "rights of employment," "dismissal when inefficient," phrases that are now new in the labor question. The short life of the worker as a machine-tender has forced the trade-union to limit output whenever the day is lengthened, speeding-up resorted to, pacemaking used or the number of machines to worker increased. The old apprentice system is now a thing of the past, and in this question the trade-union insists that apprentices shall not be introduced as a disguise for cheap labor, but that they shall receive instruction and adequate pay. Machinery affects the employment of men by reducing numbers and lowering the skill required. To offset these the unions demand the right to consider the conditions of introduction. A propaganda extended and energetic increases the membership of these industrial organizations and makes possible the attainment of the objects named above.

The weakness of the individual is strikingly brought out when forced to accept the terms of employment under stress of sickness at home or conditions similarly distressing. It is proposed to conceal and protect the economic weakness of the individual under the general average of the group. The trade-unions, particularly in the more

skilled industries, seek to determine wages and conditions of employment by collective bargaining. Such methods of wage-settlement require agreement among the members of the union upon the conditions. To meet this the policy known as the "common rule" has been adopted. As indicated in another place the "common rule" maintains a minimum wage, a normal day, now regarded as eight hours, and sanitary conditions in shop and factory. In so far as the minimum wage is standard the employer can not afford to employ any but the best workmen, so that the lower grade of workmen is at the mercy of the sweated industries, and in times of depression the number of those close to the edge of non-employment is greatly enlarged. Even the living wage and standards of employment do not solve the problem of the unemployed and the unemployable.

"To improve the condition of wage-earners labor must own machines." This is the dictum of a group of workers, still sympathetic with the trade-union but far from socialism, yet convinced that the trade-unionist must hold his place at the sufferance and sometimes by the charity of the employer. Under competition there is no share of the profits but an increasing unsteadiness of employment which makes the future uncertain for the man who depends upon manual labor for his support. The machine does in many instances most of the thinking, and by the very force of the situation the machine, the man who owns it, will take the profits. How, then, to get the machine and the profits for the man who tends it? This is to be done by cooperation—a union of capital with the labor power of the worker—in which the employer is eliminated and the workers share the total product. Competition, the dreaded thing, is eliminated from the group, though severe contests may take place with outside groups. This system, with its three divisions of cooperative banking, manufacturing and merchandizing, is sharply separated from most modern plans of social organization in that it advocates no dist

ance of private property, insists upon self-exertion, refuses state subsidies, and shuns interference with the individual freedom so likely to take place in a socialistic scheme.

Nevertheless, the socialists declare that trade-unionism, cooperation, and the other modifications of the competitive system are inadequate, limited in scope, and never likely to reach the real evil—the existence of a proletariat. In the opinion of these advocates it is impossible to secure equality through the voluntary organization of industry that by its very competition forces men into lower and lower stages of industrial activity. From their point of view there is no question that greater equality of income and opportunity can never be secured under the present system.

In the place of the now chaotic, revolutionary and disturbed society socialism is to abolish poverty, to provide work for all, and require all to work, to give to each an adequate income; in fact, to restore society to a peaceful organism working for its own interests, not those of individuals. Its fundamental problem is to secure equality. To accomplish this the so-called scientific socialists have proposed the labor theory of value, in the terms of which all values are measured by their labor cost. Having nationalized, or democratized, the means of production each member of society may lay claim to a share of the product measured by the values created by his labor. Socialism then becomes the organization of society, for and by the proletariat, through the convenient institution of universal suffrage. The capitalists as such disappear, wage-slavery becomes a thing of the past, and under the stimulus of a new society, freed from the burdens of the old organization, the final product is to materially increase, enlarging individual incomes as already suggested. Thus far socialism has been a form of criticism and the caustic comments of its advocates upon the present individualistic society

have brought out clearly its faults and defects; but socialism is not constructive, the burden of proof against possible modification of the present system rests upon it. In fact the advocates of that creed must show how a collectivist state can be organized, and further, that it will be superior to the existing capitalistic régime.

Meantime, while the advocates of various forms of social organization are presenting their theories with unusual energy, a great change is taking place in the relations of capital and labor. The organization of capital in the large corporation and combination, and of labor in the trade-union, furnishes the basis of an alliance which proves more and more possible with the movement of events. The power of the one to retain the market and the control of materials, and of the other to limit the supply of labor, are all that is necessary to give complete control of products. One result only can come from these alliances, a result clearly perceivable in higher prices and increased burden for the consumer to carry. Competitors will be forced to pay the higher wages secured to the labor group through the alliance, and the consumer can not look for relief from that source. Bitter warfare may occasionally break out between the members of the alliance over the division of the spoils, but mutual interests will soon find a way to avoid disagreements over wages and profits. High prices from such causes will be productive of a decreased purchasing power, a closing of employment to many by the restrictive action of the union, the rapid appearance of a proletariat and the forming of class lines more markedly than in the past. Such an outcome will lessen rather than strengthen the faith of the individualist in the competitive system and establish the socialist as a prophet.

From what has been said it will be seen that industry in America, as well as in other lands, is involved in serious problems the solution of which stirs the very foundati of modern industrial society. The forces now at w

tend to deprive men of their independence, to make them the subjects of machinery, of trade organizations, trusts and corporations. The human refuse from machine industries is thrown upon the mercy of society, which attempts, through the inadequate methods of charity, poor relief and the almshouse, to take care of the most distressing cases. Accidents and deaths from the conduct of industry number armies in their totals, inequalities of wages and wealth-distribution are apparent everywhere. Monopolies strongly organized under the privileges of the law levy taxes upon consumers, trade-unions and corporations combine for mutual advantage and against the welfare of the people as a whole. It is indeed a sea of difficulties. The state is confronted by problems, some definite, some intangible, all serious. How is the state to promote the equality of citizenship and opportunity, to keep open for every wage-earner the possibility of a future that is something more than a meager support and a hard living; how, indeed, is this body to conserve the forces of initiative against the hardening of class lines and the extension of state functions, break up monopoly privilege of every kind and reduce corporations to their proper place in the law?

Is it necessary in order to meet these difficulties to reform society, or are the foundations so securely laid on private property, individual initiative and competition, that these may be retained through some modification of the wages and capital system now seen only in dimmest outline? The individualist having parted company with the old laissez faire doctrine is ready to modify the competitive system to avoid its evils. But the socialist refuses to consider modification, looking for the final solution in a society based upon equality, public ownership of the means of production, and distribution of product upon the basis of labor done or the needs of the members of society. The first means the natural evolution of the existent, the second a complete revolution of the competitive

system. If we refuse to accept the last as a solution we are forced to turn to the existing state as the institution that shall in the end control modern industry. If this view is accepted the interest centers in the possible attitude the state might take in reference to its development and the final solution of these problems. No complete solution can ever be attained by the state, but it is forced nevertheless to take a position. Three ways only are open to it under the present conditions. These are found in occasional interference, systematic regulation, and government ownership of public utilities.

CHAPTER II

INTERFERENCE

As the reader approaches the question of state functions he is confronted by a number of views relating to the control and regulation of industry. At one extreme is the panpolity of the scientific socialist school and at the other the anarchistic individualists; between the two extremes is a variety of opinion shading from one to the other. Socialism proposes, in so far as it may be distinguished from state socialism, a revolution of society, the elimination of competition, the suppression of private property and the control of industry by the people. It is based upon the widest notions of democracy. German in origin, it refuses to accept the modern state, forgetting that in England and America a democracy already exists upon which might be builded a socialist state. It seeks a new organization dominated by notions of equality resting upon labor theories of value.

Nevertheless it may be taken for granted that the corner stones of the modern state, so long in the making, will not be cast aside in the organization of the future state. In so far as scientific socialism proposes to do this just so far may it be counted out in the reconstruction of modern industry. The right to property, individual initiative, competition, freedom of contract, are necessary to growth and progress. From time to time these may be modified, may be limited and restricted, but the present

and future generations will not cast them aside for the uncertainties of an unknown and unconstructed organization. The statesman and the citizen are not confronted by a question of the establishment of a revolutionized society under the direction of a panpolity, but are brought face to face with problems dealing with the modification of the present state in which are retained the great developing forces of the past century: individual initiative and industrial liberty.

Consequently, the paramount issue is the continuance of a state in which the present institutions may remain in their essentials. What theory of the state permits this and permitting it meets the difficulties now found in an industrial society? To this query a number of answers may be given. For one, individualism of the Herbert Spencer type is all-sufficient, to another reasonable regulation of industry is necessary, while to a third state socialism furnishes a solution of these problems. As a result of such positions we have the advocates of occasional interference, of systematic regulation and of government ownership of public utilities.

A distinction must be made between the terms used in the paragraph above in order to indicate the steps leading from one to the other. Interference in industrial matters is confined to intervention in acts that are detrimental to the state and public welfare. Regulation presupposes a rule or order prescribed by a superior or competent authority which determines the actions of those under its control. Ownership is the property right over wealth and implies its use and direction. Carrying the analysis farther it is found that in a state, interference takes place at irregular intervals under the direction of the judicial and at times the executive powers of the government without the necessity of an organized code of laws. Such government action as aims to secure the fullest freedom of competition and the enforcement of contracts may be

classed under this head. Regulation, as contrasted with interference, is continuous in that definite rules are laid down to control the actions of individuals in industrial matters while in a state where there is occasional interference the legislation is usually of a prohibitive nature. In the interference state the government machinery is simple, in the regulative more complex. The latter form includes inspectors, boards and commissions in its organization; the state ownership system is a still more complicated type because of the presence of vast bureaus and departments necessary to the conduct of the state industries.

Much as we have been led to believe that the doctrine of laissez faire has meant the simplest form of government content to permit economic laws to work out the problem, nevertheless it has always presupposed the existence of a more than average intelligence and the presence of adults fully able to know and to carry out their own wishes. The very presence of the state is evidence of at least a limited interference, as is seen in the collection of taxes, the enforcement of law and the maintenance of armies and navies. On the ground that men may be expected to discover and aim at their own interests better than a government can do it for them, the individualist stands opposed to any extension of state activities beyond the necessary protection against imposture, ignorance and violation of rights. Under a rule of this kind self-reliance, activity and enterprise are wonderfully stimulated. It may be said that such a plan of government works more than fairly well, but requires some interference.

Freedom of contract is a necessary requisite of an individualist society; it requires as an essential element of its working the presence of a power able and willing to enforce agreements when made by individuals. Besides this duty the government, even the individualistic society, is called upon to remedy wrongs by enforcing reparation

or inflicting punishment upon evil-doers. In the same sense violation of property rights by mobs or bandits must be prevented by force if necessary. The government, too, may within limits prohibit acts involving mischief to others and in an industrial state protect children not only against the tyranny of parents who seek increased earnings by the exploitation of their children, but also from the excessive hours of labor exacted by overgreedy employers. Even the compulsory insurance in the German Empire may be justified on the ground that it stimulates self-help and maintains self-respect by keeping individuals out of almshouses during times of temporary illness. In this instance the individual is protected against the too heavy punishment of competition by the distribution of the cost over the three agents of production; fundamentally, however, individualism insists upon each person bearing the cost which falls on him as the result of the freedom of contract and industrial liberty.

Individualism and interference are not antagonistic to the degree usually declared; in fact, some interference is necessary to secure the action of economic law. To what degree, then, have states interfered in industry without entering the field of regulation or government ownership? It is not beyond the scope of an individualist state to enforce contracts, maintain competition, protect property, prevent mischief and guard the lives and health of those not able to sustain their own interests. The individualist feels that there is an opposition arising between the state and the person when the former enters the field of industry. It is his desire that the state should give sufficient scope for private enterprise and at the same time exercise that supervision which may be necessary to give freedom of competition in its best sense, prevent coercion either by employer or organized employee, and on the whole let economic forces rather than legislation determine the relations between individuals in the field of industry.

Still, even the individualist knows that there must be some correction of the self-seeking in an unlimited state of laissez faire, otherwise the very basis of individualism, freedom of contract and industrial liberty might be perverted into industrial absolutism.

The common law has long held two classes of agreements to be void. Under the first of these there is required a full and free consent to the conditions before the law will recognize them as acceptable; in the second class contracts or agreements opposed to public policy are when so found non-enforceable and void. Starting with these great legal principles as the basis of interference and of legislation the courts of all lands have steadily refused to sanction contracts or agreements when they were not in accord with them. When expanded to the fullest extent these principles justify state socialism. Between interference and socialism no great barrier exists so far as the grounds of interference are concerned. The difference is found in the advocate's attitude of mind toward the great question of state aid and state holp.

Competition has long been defined as the free play of individual self-interest, which when active is supposed to result in a fairly equitable, certainly automatic distribution of wealth. In the actual field there are forces that counteract its workings; these are custom, combination, legislation and the presence of large numbers of non-competing groups. Despite this formidable array of opposing forces the individualist holds that the only principle maintainable in the long run is that of competition. The common law recognizes the possibility of evil conditions under a contract, and in view of this maintains the right of the individual to compete and to be free from restraint in the conduct of his business. To buy or sell, to promise or not to promise, are open to every man, but once having made a contract the whole weight of the social organization bears on him to carry out the agreement

except in the instances of contracts not freely made and those against public policy or in restraint of trade.

Any agreement involves an obligation limiting personal freedom. The passage of society from status to contract necessitated a legal relation which appears in the contract, still enforceable by the state just as the conditions of status were, but differing in the option of the individual to enter into a legal relation with another. In fact, " every person not subject to any legal incapacity may dispose freely of his actions and property within the limits allowable by the general law. Liability on a contract consists in a limitation of this disposing power by a voluntary act of the party which places some portion of that power at the command of the other party to the contract. So much of the contractor's individual freedom is taken from him and made over to the other party to the contract." * " The state undertakes to enforce the self-imposed obligation except when it does not conform to general law. This power of the state is great and opens the way to possible abuse in the enforcement of contracts. The widest and most important function of the state with relation to trade is then to enforce contracts; and it does this by means of suits for damages and for specific performance in courts of law. The great principle which governs the action of law, i. e., the action of the state in these cases, is that free and intelligent consent is of the essence of such a contract as the law will enforce." †

In what cases will the state enforce contracts or refuse to sanction them in the fields of commerce and industry? This query touches not only the buying and selling of commodities but the employment of labor. It applies to competition, its freedom or limitation, to restraint of trade, the maintenance of monopoly, to wage contracts, organization of unions and associations, strikes and boycotts, and

* Pollock, Contracts, p. 187, 2 Ed.
† Farrar, The State in Its Relation to Trade, p. 16.

the employment of women and children. A complete discussion of these points would require a volume in itself. For this the reader must be content to accept the remaining paragraphs of a chapter.

Numerous cases have been brought in the courts of different countries to determine what is meant by fair competition. It has been generally decided that competition is fair when open without privilege or concession to the competitors. A man can not claim freedom from competition because of priority of entrance into a trade, nor does a reflection cast upon the goods of a manufacturer by another in the same business constitute libel or give a basis of legal complaint of unfairness. An agreement with a state, even though it be in its nature a monopoly, as in the instance of the sole right to build a bridge within a given distance from a city, is a contract and enforceable against those who infringe. In the ordinary relations of men, when there is no state concession, unfair competition exists when an act is a wrongful one under the law and by fraudulent misrepresentations injures the business of an individual. Morally individuals are under obligation to abstain from any interference with contracts between different persons, but the law does not undertake to enforce it unless fraud, misrepresentation, or malicious intent are shown. To prevent a contract by such means when once entered upon and on its way toward completion is illegal and in violation of the principle of competition which the state has always shown itself ready to maintain. Where no contract exists fraud or misrepresentation are the essential elements in unfairness. Under an individualistic régime these constitute causes for action in courts of law. The machinery of intervention is started by a request made to the judiciary of the state.

"What, then," asks the judge in the Mogul Steamship case, "are the limitations which the law imposes on a trader in the conduct of his business as between himself and other

traders? There seem to be no burdens or restrictions in law upon a trader which arise merely from the fact that he is a trader, and which are not equally laid on all other subjects of the Crown. His right to trade freely is a right which the law recognizes and encourages, but it is one which places him at no special disadvantage as compared with others. No man, whether trader or not, can, however, justify damaging another in his commercial business by fraud or misrepresentation. Intimidation, obstruction, and molestation are forbidden; so is the intentional procurement of a violation of individual rights, contractual or other, assuming always that there is no just cause for it. The intentional driving away of customers by show of violence; the obstruction of actors on the stage by preconcerted hissing; the disturbance of wild fowl in decoys by firing guns; the impeding or threatening servants or workmen; the inducing persons under contract; all are instances of such forbidden acts. The substance of my view is this, that competition, however severe and egotistical, if unattended by circumstances of dishonesty, intimidation, molestation, or such inequalities as I have above referred to, gives rise to no cause of action at common law. I myself would deem it to be a misfortune if we were to attempt to prescribe to the business world how honest and peaceable trade was to be carried on in a case where no such illegal elements as I have mentioned exist, or were to adopt some standard of judicial 'reasonableness' or of 'normal' prices or 'fair freights,' to which commercial adventurers were bound to conform." * Here within the paragraph just cited is a concise statement of the essential principles upon which interference is based in the individualist state; reliance in the long run must be placed upon economic laws; the state can not establish a standard of conduct or of economic advantage that will result in ultimate justice.

* Law Reports, 23 Queen's Bench Division, p. 598.

There was a time in English history when the common law looked upon contracts made to prevent men from carrying on their callings as restraint of trade. By degrees this principle, so broadly stated, has been modified to meet the changing conditions of industry. Several centuries ago it was declared that a contract in general restraint of trade was bad, but, if in partial restraint, it might be valid. Within recent years the courts of equity have come to regard the common law as a mere application of a more general principle: that restraint of trade must be reasonable. The old doctrine applied to one location, but with the annihilation of time and space by science and invention it became unreasonable to make void any agreement not to carry on a trade anywhere. Consequently, restraint of trade to be unreasonable must show injury to the individual or be opposed to public welfare.

The adherents of individualism believe that they have an all-sufficient remedy for the protection of the individual and the public in the principles of the common law. This law as such does not prohibit the making of contracts in restraint of trade, it refuses to recognize their validity after they have been made. To create restrictive law, from this point of view, is to hamper competition, for public policy favors the utmost freedom of contract except where the agreements are not made for the purpose of enlarging the capital of the individual concern, increasing the facilities to do business, or for the protection of the parties to a contract against active competition, but for the purpose of regulating, controlling and withholding the supply so as to enhance the price of necessities. Where agreements have been made to accomplish such a purpose the courts have, when appealed to, denied their validity and dissolved them.

The common law may be said, at least by implication, to control the actions of corporations. Grants of a corporate nature are always supposedly made for the benefit of the public; to use them in such a way as to destroy the

normal functions of the corporation, to take away its free and independent action, to maim and cripple separate activity, is to nullify the purpose of its creation. And if such violation is followed by placing the corporate powers and privileges in pawn and the giving over of its independence and self-control to an irresponsible board, then indeed has it wasted and abused the privileges conferred upon it. The partnership of corporations with corporations is in itself void.* "If," to use the language of the court in the case of the People vs. the North River Sugar Refining Company, "corporations can combine, and mass their forces in a solid trust or partnership, with little added risk to the capital already embarked without limit to the magnitude of the aggregation, a tempting and easy road is open to enormous combinations, vastly exceeding in number and strength and in their power over industry any possibilities of individual ownership; and the state, by creation of the artificial persons constituting the elements of the combination, and failing to limit and restrain their powers, becomes itself the responsible creator, the voluntary cause of an aggregation of capital which it simply endures in the individual as the product of its free agency. What it may bear is one thing, what it should cause and create is another."

In the case of combination the individualist is forced to resort to legislation to prevent the aggregation of capital unless he expects economic forces to slowly drive fictitious and unnecessary combinations to the wall. He, however, is not opposed to large capitalistic concerns as such, in fact he welcomes them if they make for economy rather than for monopoly. Says a recent writer, "In fact, the most deep-seated weakness and most formidable danger of individualism lies in the possibility—which it can not but admit—that the free competition on which it relies may by 'free combination' be turned into its economic opposite, 'mo-

* 121 New York Reports, p. 582.

nopoly.' " * Even this possibility the individualist maintains is met, in so far as it is dangerous, by the two fundamental principles of the common law referred to in a paragraph before. If there is coercion the courts grant a remedy in refusing to sanction contracts not freely made; if there is restriction of supply, or unreasonable price, the courts find such action detrimental to public policy. In the words of the individualist, what more is wanted in the regulation of industry when it is highly essential that freedom, responsibility and initiative shall have full sway in forming individual and community character?

As a rule the individualist maintains that adult persons ought to take care of themselves and observe where they are going; if this is not insisted upon leaders are not developed; and further, the more you guide people the more they become heedless and the greater the accidents are likely to be. Some exceptions to such ruling would undoubtedly be made by the most ardent followers of the principle, but in the main the contract between employer and employee may be made without unnecessary and extensive regulation on the part of the state. If, in other words, an employer offers a man work in a shop known to be unhealthy, is it not a question that can be determined by the workman, and if the unsanitary shop threatens the health of the public is not the falling off in the employer's trade a power that will correct the evil? Are there not, then, adequate forces at work in a free industrial society that will solve the difficulties without legislative interference, not only in reference to the competition of producers and consumers, but in the relations of master and servant?

Of the first we have seen something in the preceding part of the chapter, of the second we are now to hear in the remaining paragraphs.

Freedom of labor contract is in the main a nineteenth century product. During the medieval period in English

* Sidgwick, Elements of Politics, p. 556.

history the laborer was prevented by law, as in the instance of the Statute of Apprentices, from exercising freedom of employment. The guilds, too, held a tight rein over the industrial options of their members. Such legislation was distinctly in favor of the dominant class and added to their power over the working people of the kingdom. It was not until the nineteenth century that the old restrictions were removed and the principle of industrial liberty applied to laborers as well as entrepreneurs and capitalists. Although the common law was distinctly marked by the class prejudice just referred to, the judges nevertheless attempted to give a laborer some margin for the exercise of the freedom of contract. The attitude of the common law has been materially strengthened by the refusal of the courts to maintain as constitutional the statutes limiting the conditions of the labor-contract for adults. Among these statutes are found eight-hour laws; truck acts; specific payment of employees in money; laws forbidding employers to measure wages by screened coal, or to withhold wages for imperfect work or damage to material; laws that employees must be paid at stated intervals and forbidding contracts for payments at longer intervals; laws limiting the right of a person to contract with whom he will, as, for instance, with non-union employees; laws forbidding the citizen of a state to engage in a specific business.* We find upon the whole that the courts have maintained the position of the individualist that laws limiting the so-called natural rights of any specific group of persons are invalid except where necessary to sustain the police power of the state. It is upon the interpretation of this phrase that the individualist parts company with the advocates for larger state action.

The phrase freedom of contract applies to labor as well as to capital. In its application to labor it has come to be regarded as a property right closely coupled with personal

* F. J. Stimson, Handbook of Labor Law in the United States, p. 13.

liberty. There is, however, a difference between a labor contract and what may be termed, for want of a better phrase, a capital contract. A contract between a laborer and an employer is enforceable by one party, the laborer. The courts have repeatedly held that a contract for services can not be enforced by a demand or compulsion of labor because of the indefinite meaning of services; but the employee can compel the employer to make payment of wages and fulfil the conditions of the contract. The employer has recourse to an action against his employee for damages, but he can not secure the fulfilment of the contract or the punishment of his workman for leaving his service. Consequently the employee, not being subject to a criminal action, may leave his employment singly or in groups without punishment for committing a crime. If there is preconcerted action to leave employment for the purpose of injuring an employer, then the crime of conspiracy has been committed; but it is not for leaving employment that punishment lies, but for combination to do an injury.

It is in this principle of law and its application that the individualist finds a sufficient remedy for labor troubles. Why should the state interfere by regulation when the law provides for ample satisfaction in case of violation of labor contract or of combinations to do injury? Laborers may leave their employment when no definite time is stated, and employers may discharge their workers, when in the judgment of the employer it is necessary, without involving questions of crime or damages. In the competitive world it is a question of agreement determinable by the parties interested in the matter. It is not necessary, declares the individualist, to regulate, to hedge the conditions of employment with restrictions and limitations. These are matters which are settled every day without aid from the state. Even in the difficulties raised by a strike the law is sufficient without courts of arbitration and con-

ciliation. The doctrine of the common law is that an unlawful conspiracy is a combination of two or more persons to accomplish a criminal, unlawful, or immoral purpose by means which may be unlawful or lawful; or a combination to accomplish a lawful purpose by criminal or illegal means, or for a purpose which only could be brought about by the use of such means. The old interpretation of the law has been modified in some degree; to-day it is pretty well agreed that an act on the part of two or more persons is indictable as a conspiracy when there has been a definite breach of contract and a preconcerted agreement to break the contract. It may be taken for granted that the organization of society, from the individualist point of view at least, depends upon the idea that individuals will act as such, pursuing independent courses of action.

To have a large body of men leave their employments, to prevent others by force from filling their positions, and demand as a condition of their return higher wages, is to imperil the ordinary course of a community's affairs. How far can these men go in restricting industry? From the point of view of the common law that depends whether there has been coercion or restraint of trade by the organized laborers. It is now well accepted, especially where the common law has been embodied in statutes, that combinations of laborers or employees can when acting in their collective capacity fix wages and make rules binding among themselves without violating the law. An unlawful conspiracy then comes to be a combination for the purpose of compelling journeymen to conform to any rule or agreement, to which they are not parties, by the imposition of penalties, by boycotting, or by the threat of strikes. Laborers and the labor-unions have thus come to acquire an entire right to compel employers to deal solely with the union so long as they use all proper means by persuasion or by lawfully conducted strikes. The employer may make non-membership a condition of employment

ting in a measure the advantage of the trade-union. So it appears that the followers of organized labor can restrict the ordinary course of a community's industry in so far as their actions conform to the legal acts of an individual. That is, an individual may leave employment, ask for higher wages, refuse to work if they are not granted, and persuade others not to work for an employer. Such are the courses open to organized labor.

From these statements it appears that disputes between capital and labor may be left to those directly interested with some degree of certainty that a fair settlement will be reached. Through organization and mutual interests, agreement must be the ultimate end. No need exists for elaborate statutes, boards of conciliation and arbitration; the state does not find it necessary in the long run to regulate or attempt to do so. Men soon discover that commercial wars are unprofitable and that their interests are promoted by agreement. If harmony can not be secured in this way the natural method is to fight it out. The state is interested only in seeing that no one's rights are violated. The law furnishes sufficient remedy for those who are damaged; if disorder is the result of a trade dispute the police are able to deal with it. Say Messrs. Hughes and Harrison in a report of 1867: * "It seems to us that the policy of imposing exceptional penalties upon the laboring population *en masse*, and as such recognizing in that class exceptional offenses, is a principle vicious in itself, and long discredited. Nothing but some extraordinary danger to the public safety, or some peculiar proneness to crime, can justify such an anomalous system. We see nothing in the combinations of workmen which the ordinary police can not deal with." These are the views of the individualists who believe in the minimum interference in industrial affairs.

There are three remedies open to the employer who is

* Royal Labor Commission, 1867, Third Dissent, p. liii.

injured, or who feels that he may be damaged by a labor contest. First, he may bring a civil suit for payment of loss occasioned by strike or disagreement; second, to secure an indictment of the guilty parties on the ground of criminal conspiracy; and third, to ask the courts for an injunction to restrain individuals or groups of individuals from interference with business or its conduct. The first is inadequate because the wrong committed from which damages result involves a large number of persons, and also, as one authority suggests, because the damages are often irreparable. Sometimes suit may be brought against a trade-union for payment of losses, though final settlement is uncertain even when a decision has been secured against the organization. To resort to criminal action is to meet a demand by the court for evidence showing malicious or preconcerted action. In other words, a crime must be proven before a conviction can be secured, the plaintiff must show that the state is implicated by the threatening of industry through the unlawful act. In trade disputes the number of persons involved is so great that either an action for damages or an indictment for crime has proven inadequate to protect employers. Through the third remedy it is possible to anticipate damages or difficulties by the injunction issued by courts of equity. Consequently this process has come to be a most important one in its application to industrial troubles.

Originally the injunction was granted to restrain the persons named in it, but to-day in English and American courts the injunction is made mandatory, and private individuals involved in a contest among themselves are thus able to secure from a court of equity an order to the whole world not to interfere in any way with their property. The injunction applies to persons who actually do, or who have done, an act likely to injure property. The order of the court may be made permanent and a person having knowledge of the decree, "if he do or suffer to be done a

act against the decree or the injunction only," may be held for contempt of court and imprisoned. The offender is then at the mercy of the court, for the rules of law permit no jury trial in cases of contempt of court. In this the world has a process which makes any action liable, refuses a jury trial, denies the right of appeal to a higher court and ends in many cases in a fine or imprisonment.

The justification of the use of the injunction is the protection of property against acts which may destroy its usefulness or prevent its enjoyment. The courts of equity have no criminal jurisdiction, but nevertheless they propose through the injunction to interfere in any proceedings criminal or otherwise likely to affect injuriously property interest. It is difficult to say what attitude the individualist would take on the question of the injunction. The effect of the injunction has been to throw the protection of property upon the state before the owners have exercised due care in word, deed or act. This in itself is enough to bring the individualist to maintain that the courts, in the criminal and civil procedures, furnish a sufficient means of settling disputes and maintaining industrial order.

In every community there are persons unable to compete in the arena of competition without more or less disastrous results to themselves. The very doctrine of individualism presupposes more or less equality in strength and mental discernment, consequently the state may legislate for the protection of women and children without violating the principle. The aim of such legislation is to protect individuals from the mischief caused by others, although indirectly it comes to have a much wider application than the guarding of women and children from excessive hours of labor, overtime and bad sanitary conditions. In fact it would include, without opposition by the individualist, statutes to prevent the contamination of the milk, water and food supply, the restriction of the manufacture and handling of explosives, the possible regulation of the liquor

traffic and the protection of the public health. Such legislation presupposes the extension of the police power in the inspection of shops and factories and drifts easily into regulation far more extensive and far-reaching than the individualist originally intended. Just how far the government should go in preventing acts or omissions that are not directly or necessarily harmful to persons, but do injure others than the agent indirectly, is a question that must be determined by actual results, for it is mixed with the problem of how far a government ought to interfere to prevent mischief caused to an individual by himself or by his own consent. The individualist becomes by the very force of the conditions a utilitarian who severely tests demanded legislation likely to extend the police power of the state.

The individualist state is one in which state action is limited and restricted. Such legislation as is enacted from time to time is for the purpose of limiting the excesses of the laissez faire principle; in the main every man is supposedly able to look after his own interests better than any government can do it for him. Individualism believes in competition; it is a system of production by private capital held by single persons, corporations and associations. In method it demands a free labor contract, open competition, a wages system and private property. Education, not necessarily public, is a fundamental element of individualism, for it looks to the advancement of the individual mind and conscience to solve the problems of a society. It refuses to accept the notion that present government is an efficient agent, but insists that it would on the contrary utterly break down if it attempted to control the complex interests of social life. More than that, the tendency toward state socialism will inevitably undermine the self-sacrifice, self-rule, and self-advancement so necessary to the upbuilding of individual and national character. There are evils, but as men advance they are rem-

the automatic action of economic and ethical forces, while legislation which is the judgment of the mass as to future events proves in many, many instances to be wrong.

It is through the existence of a great individualistic movement that we have had constitutional liberty in politics, rational altruism in morals and modern business methods in production and distribution. The individualist has constantly insisted upon the difference between public morality and a state church, public security and police activity, public wealth and state property. He has taught men that their interests are identical.* He waits with patience and hope for the movement of educational, ethical, and economic forces, more powerful by far than legislation enacted by the state. The past has been his, the future is weighted with many problems failing of solution because of the departure from the principles of individualism. His is a stage in which men count as individuals not as a mass.

* Hadley, Economics, p. 14.

CHAPTER III

REGULATION

In the opinion of many the laissez faire doctrine, even with the influence of the common law restraining it, has worked out in a marked tendency toward monopoly. The same group also believes that whatever the merits private monopoly may possess, when thoroughly organized as an agent of production, the state can not rely upon the self-interest of the owners to supply needs or perform the services demanded by the community in a way that will be the most advantageous for the common welfare. The attempts to adjust industrial difficulties by appeal to the courts and the common law are hampered by the very inequality of the parties to the suit. The legal talent employed by the owners of a monopoly, for instance, is such as to give a marked advantage in the very opening of the case, while the long delays wear out the patience and the funds of the smaller litigant. Moreover, in those industries into which the monopoly element has not yet entered and in which the producers compete with each other, free competition turns out to be highly wasteful and at times destructive of wealth, first in the unnecessary duplication of plants and second in the continuous elimination of the relatively more poorly equipped concerns from the field of production. The strife for business in a laissez faire society soon drives the contestants to fraud and chicanery.

It is a strife for the advantage over business opponents and manufacturing competitors. Men over-insure their vessels, bad and lazy work is done by those in receipt of wages, articles of food consumption are adulterated, trade-marks and patents infringed, short weights given, and even bribery resorted to for the purpose of effecting a sale in a society where no strong hand is put forth to stay the workings of self-interest in the industrial field.

It is a category of industrial wrong-doing such as contained in the opening paragraph of the chapter that forces men to demand some restraint upon individual action.

The individualist looked to a higher moral code to make his doctrine a workable one, but the very competition of the régime tended to reduce moral ideas to a lower rather than a higher standard, with a consequent demoralization of business ethics. Mere state interference, occasional and spasmodic, is not sufficient to meet the difficulties of modern industry; the state must therefore develop its police power and regulate industry through rules and laws enforced by inspectors and police officers if we are to have some equity for producing agents and some liberty for the consumer. This is the view of an increasing number of men whom for want of a better name we may designate as regulation individualists, since they retain the principles of initiative and liberty.

The supposition was that the laissez faire attitude of the state touched all social matters. Natural and economic forces would, if left alone, determine the character of industry and the nature of the industrial society. What need under such conditions for state action other than that found in the courts and the common law? Natural and economic forces did work to such purpose that the synthesis of society was changed and a new society created. It was the laissez faire system that destroyed the old, bringing out clearly in the process of demolition the defects of its own working. Rogers remarked that it results in univer-

sal swindling in the whole of society. It was powerless to check the force of self-interest or restrain the evils of over-competition.

This let-alone policy in the face of the growing complication of the industrial organization was unattainable in its purity. The state was forced to interfere and finally to regulate. Nevertheless, a goodly body of learned men argue logically and conclusively, that time shows the futility of legislation and the value of a laissez faire policy. On the other hand, increasing knowledge of the past and a closer study of economic conditions will give the foundation for wise legislation and effective regulation. Those who demand increasing state action reply that liberty, in the sense of laissez faire, did not bring the results hoped for, nor did the attempts at cooperation and profit-sharing perceptibly modify the system. Working men want for old age something more than a prospect of the workhouse, which under the excessive competition of employers with employers and laborers with laborers was sure to come to a majority of them. The individual, where free from legislative restriction, seeks gain; the best and cheapest producer gets the market; the struggle for survival under a laissez faire régime likewise gives the mastery to the captain of industry who has developed the organization of his industrial forces to the best advantage.

The factory system, millionaires, lowered prices, higher wages, are the products of an individualistic society. So strong is the tendency toward centralization that the small producer is hampered and the laborer made more dependent upon the employer. There is likewise developed a greater producing capacity than there is consuming power. The very success of the system brings forth the phenomena of the unemployed and the tramp. The rapid appropriation of nature's resources follows as a natural result of individualistic interest and freedom of enterprise. So great has the complication of industry become that the

state, even individualistic, is forced to take up the question of regulation.

Moreover, the force upon which the individualist relies for the working of his form of society has been, as already suggested, strongly modified. The capitalist of his scheme of industrial organization is no longer an entrepreneur but a shareholder. He pays wages of management and does not receive them. The individualist insisted upon freedom for private gain, whereas the contest is for the control of industry and national control of world commerce at that. Then, too, private business has been organized into companies and corporations which take away the point of the individualist contention, because the problem, in one of its essentials at least, is to enforce directorial responsibility to the larger mass, the shareholders. The present system, with its large capital, shareholders, managers and directors, offers unusual opportunities for fraud and deceit, too well illustrated in the fictitious companies created under corporation laws. Here again is a situation requiring regulation.

Nor did competition prove as beneficial as expected. Discriminations, combinations and pooling were resorted to in an endeavor to withstand its tendency. In the operation of railroads competition often worked with a ruinous irregularity and inequality. Unprofitable trains, special rates to favored and heavy shippers, very materially complicated the situation. As it was, competition could not exist for all towns and country places. Many of them were dependent upon the rates and facilities offered by a single railway. In fact, competition touched but certain of the industries, the others were steeped in monopoly, custom, or combination. The attempts to overcome the difficulties of competition, the combinations and monopolies organized to control industries, were likely to prove so formidable as to constitute a menace to commercial freedom. Individual initiative was wrapped up in the corpo-

ration, freedom of enterprise was hampered by the very conditions of industry created by the individualistic régime. As the work of large corporations became more public in character the public authority was bound to see that the service was well carried out. In other directions the granting of franchises, eminent domain, and other privileges created a real basis for regulation in the interest of the public welfare. Having granted such important concessions the question of regulation seems alone to be unimportant. It is perhaps a question of government control or government ownership. Either one, however, involves a marked extension of government functions. Laissez faire was a remedy for conditions in the long run, but men want prevention rather than cure, the wrong stopped before it is done. Even though initiative and freedom of enterprise must be retained, it is better that they should be retained under fair conditions, which in the opinion of many can only be secured by the aid of government.

With such foregone conclusions in regard to the functions of the state the query may well arise as to the reasons for interference and regulation. Certainly it has been sufficiently shown that individualism expects and demands competition, but the very tendency of the forces at work under such a creed of state attitude is in the direction of stifling the life of the individualistic society. It must then be the first function of the state, in its relation to industry, "to determine the plane of competitive activity." * To, in fact, set a limit beyond which the strife of competitors shall not carry the adulteration of food and on the other hand prevent the restriction of industry by conspiracy and unfair means. These are but examples of the problems that confront the state in reference to the main-

* The three reasons given for state activity will be found in Prof. H. C. Adams' monograph on State Intervention, American Economic Association, 1886.

tenance of what underlies competition: initiative, energy, independence. A second reason is found in the increasing necessity placed upon the state to realize for society the benefits of monopoly. The corporation with its privileges is the creation of the state, the natural resources of the land were fundamentally the possessions of the state, but more than these private interest must be subordinated to the public welfare. Furthermore, the payment of market wages and market prices (and other payment would be impossible) on the part of the owners of the monopoly prevents any diffusion of benefits from a monopoly except as the state through its agency forces by taxation a wider distribution of the wealth accumulated by means of the monopoly. And as a third reason we find the state called upon to restore social harmony by the extension of state functions. This brings the state into a wide field of activity extending from the carrying of mails and the arbitration of labor difficulties to the maintenance of insurance against old age and accidents.

Under the individualistic régime the forces of production are on a war footing. The two great factors of industry are organized to meet the aggressions of each other. Can the state rely upon the representatives of the two sides to maintain order, or is the problem more deeply involved in the distribution of wealth and the increase of wants faster than the growth of income? Can, in fact, industrial peace be secured without the extension of state functions?

It has been pretty well demonstrated in England and America, and elsewhere for that matter, that the state can not rely upon private interests alone to promote the public welfare. Combination results from excessive competition, reorganization of industry is forced by the conflict of the many with each other, great organizations, strong by the downfall of the weak, threaten the government and continually endeavor to control the political machinery for

selfish purposes. Is it possible to have some form of government control that will be broad enough to include and reconcile the conflicting economic agents whose mutual struggles periodically convulse the entire social fabric, and at the same time strong enough to regulate the individual monopolies which threaten free competition and, as already said, control the political machinery?

Something of the freedom of the individualistic régime must be retained, consequently some of the elements of laissez faire will appear under government regulation though the state may legislate, administer and intervene in industrial matters. Certain it is the state can not enter all the fields of industry but must leave some of them to the management of the individual under a general moral and ethical code.

The division between the industries, state regulated and controlled, and those that are administered by private persons, is to-day marked by the public character of the employment. If it is an industry touching the welfare of the community the state has without hesitation undertaken regulation. Through legislation the state must determine the difference between private property and private employment and property and employment really public in character, as railways, public highways, and public utilities of various kinds. The regulation rests finally upon the right granted by the state, as in the case of corporations, and upon the nature of the business. A barrier stands in the way of wide-spread regulation beyond which the " regulation individualist " refuses to go without proof and justification. The extension of government regulation in the field of public employments depends upon past experience and the results of the experiments which have been made in different lands.

The great important thing in the development of state functions has been the increase in the number of public businesses, which, formerly distinctly private, have become

by the increasing complication of the industrial machine dove-tailed with community welfare. This fact in itself gives a basis for supervision by state authority. Early in the history of European states and later in America the fact was recognized in the effort to regulate railway construction and traffic. In any supervision of the railroad there were many inherent difficulties, involving the corporation, the shipper, the consumer and the state. To solve these by the dominance of the corporation was to give that organization too much power in the direction of industry; to regulate by competition of the shipper and consumer was to place the railroad at a disadvantage; the balancing of the factors required the presence of a neutral agent, found, in some degree, in the state. The state could regulate by virtue of its sovereignty; first, because it was the creator of the corporation and the giver of the right of eminent domain; and second, for the reason that the shipper and consumer were citizens dependent upon it for protection against extortion, overcharge, and tyranny by its own creation, the railway corporation. Yet the problem involved the reconciliation of many conflicting agents, any one of which, unreconciled, meant the disturbance at any time of at least a part of the industrial organization. There were, to briefly enumerate, the question of railroad construction, the organization of the corporation, the securing of financial assistance and directors' responsibility, the conflict of roads at competing points and terminals, the making of rates, the organization of shippers, discriminations, the conduct of allied industries by the carriers and the great group of difficulties found in pooling and combination confronting the state in its attempts at regulation. Only in a measure can it be said that states have been successful in dealing with these manifold questions. Political considerations, national interests and sectional prejudice complicate the question of regulation of railroads. With the purpose of throwing

some light upon the methods of such regulation we may turn to a brief examination of the experiences of England, the United States, and Germany.

Railroads in England have always been privately built and owned. "With the inception of the railway in England," says a writer, "Parliament assumed a dictation over affairs pertaining to it, which in scope and influence has augmented until the conduct of the British system, as a whole, is the administration of the acts of the National Legislature." The conditions of building, rates and fares were all subjected to Parliamentary acts. The public authority has dominated English railroad policy, restricting the freedom of operation since the middle of the past century. The result has been a steadiness of rates not always consistent with changing conditions, payments of dividends highly satisfactory to the shareholder in their amount and regularity, and an absence of the pools, combinations and rate wars so prevalent in the United States.

Parliament began its exercise of control over the railways by means of standing orders. This method of direct supervision soon proved inadequate, and in order to supplement it there was passed in 1842 an act creating a government department under which the Board of Trade was authorized to appoint inspectors of railways, to postpone the opening of railroads, to disallow by-laws and to institute proceedings against companies for infringing the law. The same act authorized the Board of Trade to collect statistics of operation. In the next ten years the supervising power was transferred to a body of railroad commissioners and back to the Board of Trade. Enforcement of rates and rulings was difficult; Parliament sought to utilize the judiciary in the work of securing obedience to parliamentary acts and empowered the court to hear complaints and execute judgments against the railways when it was shown by witnesses and records that the railroads and canals had failed to provide reasonable facilities in

freights, use of cars and canal-boats and had charged unreasonable and preferential rates. The form of action took that of complaint and the issue of an injunction restraining the defendants from the violation of the law. The act was of small practical utility until 1873, when the hearing of complaints was transferred to a new tribunal consisting of three commissioners. The principal duty of the commissioners was to enforce the observance of the "reasonable facilities" section of the act of 1854 and to decide disputes arising between the companies. Fifteen years later the power of the commission was still further increased and to the Board of Trade at the same time was given a number of supplementary duties. The system in England may be described as that of moderate supervision by government commissioners and boards within the restrictions established by Parliament. It is a regulation from the view-point of the shareholder and not of the shipper, of the railroad and not of commerce. Successful it has been, because early in the development of the railroads the worst features of control, such as stock-watering, rate discrimination, and jobbing of corporations, were by adequate legislation largely eliminated.

In the United States restrictive railroad legislation began in uncertainty and ended in demoralization. From the very first state legislatures encouraged reckless financing and still more reckless construction by the passage of so-called liberal measures. The corporation acts contained little or no restrictive features, responsibilities were overlooked as any part of a corporation act and freedom of initiative existed alongside of incentives to overbuild and overcapitalize. Railroads multiplied, grew in power and threatened at times the existence of industry by a short-sighted policy of overcharges. It was at this point that restrictive legislation began. The problem of interference and still more that of regulation was complicated by the uncertainties of administration. The existence of

State and Federal Governments made it difficult to define the powers of both so that legislation of a regulative character was handicapped in the beginning by questions of interpretation.

The passage of the Interstate Commerce Act in 1887 was a second step in legislative interference, for the states had prior to this date demonstrated by the conflicts and clashes of authority that their legislation must be supplemented by a Federal act. Under this act a commission of five persons was created who had authority to hear complaints, make investigations of alleged personal and place discriminations, and gather statistics relating to the operation of railroads. The act prohibited discriminations of rates, unreasonable charges, the pooling of passenger or freight business and authorized the Circuit Court of the United States to enforce the orders of the commission. Congress had attempted to provide in this act three remedies for the solution of the transportation difficulties. These may be stated as follows: first, a summary process by which complaints against railroads might be heard, adjudicated and enforced if necessary; second, to continue competition; and third, to secure publicity of the details of railroad finance and operation. The first of these remedies proved a failure from the passage of the act, the second was undoubtedly realized, but to no essential benefit of the carriers or the public, while under the third the commission was content to collect statistics, relying upon the transportation companies to furnish them without the exercise of the power of visitation by the agents of the commission. The act, therefore, was a disappointment to its friends and framers, proving to them that mere interference of government was not sufficient, but that what was needed was a grant of power adequate to regulation by government authority.

The indifferent success of railroad legislation in the United States was due to the lateness of such measures and

the fact that the railroads had been in the main unrestricted in their development. No body of law existed as a foundation and the laws that were enacted later had to pass through the interpretation, location of power and publicity stages before it was made clear that difficulties existed in the enforcement of such acts. Moreover the law was in more than one instance heavily burdened by the character of the punishment meted out to the law-breaker. Rate discriminations, pooling and other violations of the law were regarded as crimes and punishable by fines and imprisonment. This was a phase of law new to American courts, so that there arose a conflict between the commission and the courts not only relating to the interpretation of the law, but also in regard to the wisdom of such punishments. Is the raising of the price of a service either by individuals or by groups a crime? It had not been under the American law, and such interpretation is obsolete in England. Does the mere taking on of a public character in an employment so change the definition of a crime that what is legitimate in private business becomes criminal when the business is a public one?

The Elkins Bill answered in some measure the questions raised by the former interpretation of the Interstate Commerce Act. All provisions under the old act for imprisonment of offenders are repealed by the Elkins Bill and the responsibility shifted from individuals to the carrier, which is made criminally liable just as in the case of individuals under the former act. While the criminal remedies for illegal conduct are changed, the criminal provisions of the law are made more definite and positive. The shipper may still sue for damages, but at the same time the carrier may be fined if found guilty of criminal acts. The whole constitutes a new law based on the common law and bolstered up by fine and punishments where the law is violated. It is not regulation, but a wide interpretation of notions ruling under a competitive régime,

but which sooner or later must give over to real regulation by government authority.

There grew up side by side with the rapidly expanding business of railways an increasing number of large manufacturing and distributing concerns. Their capital materially increased and their business multiplied many times in late years until the large concerns dominated the different lines of business. Not only by what might be termed a natural growth had these organizations come into existence in different countries, but by the union of plants, by reorganization, by amalgamations in the form of trusts and huge corporations they had made their appearance. They were the results of excessive competition in many instances, in others they were the creations of promoters eager for fees. Changes in prices, methods of business, and the granting of credits followed these organizations, alarmed the consumer and threatened the business of smaller concerns. Immediately in America there arose a demand for restrictive and regulative legislation that would check the aggressions of the combinations; in England the demand was less assertive, and in Germany but little attention was given to the industrial change. In each of these States a new problem of government function arose, modified in each instance by the extent of the growth, the character of the people and the power of the government.

Whatever the problem was in its final analysis it meant a change in government attitude before a solution could be reached. England had early in the present century been awakened to the possible evils of corporations. Her lawmakers had therefore placed restrictions about the organization of business concerns, and by the middle of the nineteenth century there was created a considerable body of well-developed and thoroughly tested corporation law. In 1862 and since then the law has been amended. To-d England requires registration of companies, the fil

contracts made in the organizations of corporations, specific liability of directors and the publication of reports which are to make known to the public the condition of the corporation. The law in so far as it provides for actual regulation of the affairs of corporations distinguishes very sharply between public and private employments. The course of the English law as to common carriers has been directly the reverse of its course in reference to private employments. In the early stage of English industrial history many attempts were made to regulate private employments and trade, on the other hand common carriers were submitted to but little supervision. Private employments have passed from minute restrictions to almost complete non-interference, public employments, particularly common carriers, have been subjected to an almost complete state control. The growth in the one case has been from annoying restriction to complete freedom, in the other from freedom to full supervision and control.

The regulation of prices of either labor or merchandise has been cast aside as unwise in this notable industrial land. There is no restriction in her laws directly or indirectly upon individuals or corporations to dispose of their labor or produce at their own free will. In fact the right of free use and free sale is fully established. It is the view of English authorities after a long and continuous experience that combinations do not work any substantial damage to any one except the parties to the combination. The question of restraint of trade which may arise at times depends upon the reasonableness of such restraint. If it arises in private contract in which the public has no interest the courts must determine whether a damage has been done. When public interest has been affected and there is no statutory provision touching the matter the courts must say what is reasonable. The common-law rule which requires that a price or a charge must be reasonable for a public service is in itself a regulation which the Eng-

lish look upon as a sufficient control. When under the common-law rule a damage may be done some individual, the courts provide every facility for action against the individual or corporation when such is the case. There is no limiting of prices by law, no indictment by jury or punishment by fine or imprisonment when a group of individuals form a combination and in the course of business raise the price of their products.

In the United States there has been a great deal of legislation along industrial lines. In its nature this legislation partakes of the nature of interference rather than of regulation; for the acts have been sporadic attempts to square the principles of laissez faire to the new conditions and the larger and more complicated industrial organization. The success has been but indifferent in most cases, and satisfactory only when regulation has been adopted as the method for government action. The competition of the States with each other in the organization of corporations has materially complicated the difficulties, for interstate comity compels the admittance of a corporation, good or bad, within the boundaries of a State. This limited control of a State over the organization of commercial companies has brought the Federal Government into the field of legislation, just as the questions relating to common carriers forced the same power to deal with the problems of transportation.

Rapid indeed in America has been the movement of private employments which involve a community welfare to a public importance. The legislation against combinations has invariably been passed from this point of view. To put it in a more direct way the statutes were enacted to prevent combines in trade which might become dangerous to the public and destroy such as already exist. The supposition is that the common law and the ability of the judges will protect the people against monopolies that can be proved to be against public policy. But by defining in

specific terms the objectionable acts of a combination it is hoped to bring out clearly the rights of the people and the duties of officers.

The common law by this means has been directly applied to modern conditions and sometimes extended beyond its original scope. Thus contracts under the common law, though in partial restraint of trade were held to be reasonable, were in the terms of the new statutes, though reasonable, declared invalid. The State and Federal power, too, have certainly in some instances been led by this view to an interference in what might be called strictly private business, a procedure at variance with modern English and American commercial law.

The interference just referred to touches the problem at the point of prices. It has been declared criminal both by statute and judicial decree to raise the price of articles of prime necessity. A position of this kind when taken by a legislature or a court compels a distinction between the various kinds of merchandise and their importance to human welfare. Although such a position is legally impossible because of the absence of any statute fixing prices nevertheless the courts have punished as criminal the raising of prices by combination or agreement. Neither is it possible to assert where the line shall be drawn between the necessary and unnecessary. Further a crime involves the violation of a legal right of individuals or groups of individuals, which in the case of the raising of prices can scarcely be committed, since as already pointed out no statutes fixing prices or distinguishing between articles of merchandise exist on the law-books of any important state.

Still the Sherman Act of 1890 and some of the statutes of the different States make criminal combinations which raise prices or engage in acts restraining trade. The first-named act made no attempt to regulate large combinations or their methods other than by interfering in their affairs under the criminal code. It provided no machinery for

examination, registration or directors' responsibility, but attempted to restate and in a measure to reform the common law. Beyond that law the interpretation of the act has carried the courts so that to-day the cases which have arisen under it present a considerable departure from the principles of the common law. Interference under the Sherman Act has accomplished but little in the solution of the trust problem, leaving it in a considerable degree an unsatisfactory piece of legislation with little to show for its passage.

Nevertheless the reliance upon it for the solution of difficult problems has in no great measure ceased. Seemingly the government in legislature and executive is not ready for a thorough-going corporation law or far-reaching regulation. The feeling against possible repression of individual initiative by government machinery has resulted in a dependence upon the common law and the extension of its principles into a series of judicial interpretations that are essentially different from the law of the century past. We have in the United States, as already pointed out, a mixture of common law and remedial regulation that nullifies the original and renders difficult the enforcement of a newer form. For fear the reader may have forgotten this essential point attention is called to the attempts to limit price by judicial and legislative decree in the recent trust cases and the punishment meted out to offenders when proven that prices had been raised by a group of producers. The American trust law possesses no features that are essential for a wide general welfare. As in the case of common carriers the States have framed no uniform law and in most instances have failed to enforce such statutes as do exist on the law-books. The conflict of authority so noticeable in the efforts to regulate railroads is absent in the attempts to enforce trust legislation, the commonwealths willingly turning to the Federal authorities for assistance. Such law as is found is largely negative

and destructive in character, seemingly regarding the trust and large corporation as undesirable.

If we turn to the German Empire a very different aspect is presented. In the first place the extent of industrial organization is not so great nor is the trust known in its American form; in the second place the Government has fully recognized the desirability of preventing trade demoralization. Contracts that aim to forestall such a calamity are accepted as beneficial to public welfare and regarded as legal by the Government. In consequence virtually no hostile legislation exists in Germany against the combination as such. The courts which in the United States have interpreted the common law as supplemented by statutes to mean that restrictions of trade even though reasonable are invalid, and in England declared partial restraint legal under certain conditions, have in Germany taken the ground that the interests of combinations were identical with those of the people and the welfare of an industry depends on the maintenance of prices. When such is the case the courts have actually stated that there is but little difference between prices artificially increased by a tariff and the increase due to the action of entrepreneurs. Accompanying such liberal interpretation of combination acts is a rigid corporation law which subjects every proposal in corporate form to the most rigid inspection and prevents the evils due to excessive organization of combination before they take place.

The picturesque promoter so familiar to the metropolitan life of the United States and England does not appear prominently in the organization of the German cartel. The presentation of a few of the principal features of the law clearly explains without extensive comment the reasons for his inactivity in that profitable field. The law requires a fully paid-up capital, the promoters must state accurately in a report to the Government the nature nd character of their transactions, full details of the busi-

ness of bought-up plants must accompany the report, directors are held responsible for the conduct of the enterprise and the Government has the right of inspection. The promoter gets his profits from the premiums at which the shares are sold to the public. Watered stock is virtually unknown and the dishonest and reckless promotion of corporations stopped by these rigid laws without, however, injuring sound enterprise.

Our brief review of government action in the field of industry brought out clearly the necessity of a regulative power and the nature of the attempts of various governments to deal with the problems. It also uncovered the fact that in the exercise of regulative and restrictive measures governments differ greatly, the older and more conservative nations developing constructive and preventive legislation, the younger and more radical evolving destructive and negative laws in dealing with the difficult economic problems. Both of these statements need some modification, but in the main are true to the real facts. England and Germany had throughout the whole of the past thirty years an undivided and centralized power in their governments. They were not hindered in their dealing with economic situations by the conflict of authority so frequently seen in America from 1870 to 1895; consequently their legislation was more consistent and continuous than that of the American States. The very statement of the difference in legislation attained in the different lands is suggestive of the point that the character of the government changes the problem of regulation. Monarchical Germany has no difficulty in getting results that are essentially impossible in America, but Englishmen would reject state ownership as a means of conducting their railroads and Americans have refused to establish the government interference of Great Britain. In the first named land a centralized power was able to organize s systems of transportation at a time of great indr

chaos, the strong sense of order and subservience of individuals and corporations to the public welfare in Great Britain gave her people public interference, while in America personal independence, weak governments and great necessity brought forth an extended system of individual liberty.

Germany presents a picture of complete government domination and direction in its industrial matters; England in the main controls the enterprise of her citizens; the United States still stands forth in the minds of many as a land in which railroads war with the state and corporations threaten the integrity of government. Industrial liberty and the absence of restraining influences permitted the growth of gigantic organizations in the last-mentioned country that seized many privileges and intrenched themselves in the very government itself. The struggle for control established drastic legislation that was destructive in character. The theories of the Granger legislation were wrong, however necessary the legislation may have been, and it failed to create a lasting body of law. It was clearly proven that successful regulation must be preventive and not prohibitive. Taking it for granted that great railroads and gigantic combinations are here to remain as a part of the industrial organization and that they do exert great influence on a government, two questions arise: one relative to the strength of a democratic state and the other in reference to the nature of industrial regulation. The contents of the chapter point to the answers which after so many pages of discussion are given in brief form. To the first it may be replied that government by the people increases in strength and ability to do things as the people come to identify their interests with those of the government, and insist upon better administration. Such a state may wisely and well postpone indefinitely questions of ownership while working out the more important problem of control and cen-

tralizing power. To the second an answer implying the necessity of moderate, consistent, and well-organized laws may be given. Such legislation should include publicity of corporation accounts and relations, the responsibility of directors, limitation of promoting, and regulation of rates for public service. Regulation by government in the vastness of modern industry is a necessity, a requisite to order and harmony. It must begin with a well-established government and reasonable law.

CHAPTER IV

GOVERNMENT OWNERSHIP

WILL the people of a state consent to be the serfs of a few shareholders or will they be willing to take over the management of industry? This is the query raised by the advocates not only of socialism, but by the expansionist of government function. The statement of the alternatives, ownership or feudalism, places the discussion of the principles on fundamental grounds. Whether a partisan of state socialism, or of socialism itself, the reasons urged for the adoption of wide social action are the same, but the resultant state organization, however, is a decidedly different one. The mere extender of government function hopes to retain the forces found in initiative and individual effort alongside of the present state activities; the state socialist expects the state to own and control the great industries; while the scientific socialist discards the present state and looks to a collectivist organization of industry for the solution of the difficulty. The first two groups of advocates touch in their contentions practical problems and possible solutions which are within the power of the present state, but the third is outside the realm of immediate possibilities and need not be considered as an essential factor in the solution of present-day problems. The remaining two, however, represent two important phases of opinion that differ only in degree and it is to the consideration of them that this chapter is devoted.

The argument for such state action runs as follows: the state must extend its functions if the rights of the people are to be maintained, and the consumer saved from excessive charges. Competition in its present form must, if allowed to run its course, result in a grinding that leaves but a survival of the original number, the so-called "fittest." When this occurs competition no longer exists and a monopoly position is secured by the survivors which makes arbitrary conduct the rule. In the competitive stage trade wars, overcapitalization, discrimination, loss of life from careless use of machinery, must result from the freedom of all to do as they wish. Irresponsible parties rush in to determine what industries shall be built up. Their temporary interests are allowed to decide the permanent welfare of society. It is a transition time of wholesale bankruptcy, losses to shareholders, rebates and uncertainty. In its own defense the state is compelled to regulate. Attempts are made to build up a machinery that will control private interests, regulate their charges and force them to conform to the welfare of the state. Great difficulty is experienced in getting a meager control over non-essentials. As the private organizations grow larger they stand upon their legal powers and defy interference and control. Self-interest being vital, the owners of railroads and corporations seek to corrupt the boards and commissions established by the state to execute the laws. And in time politics enters business and business becomes permeated with politics.

Non-interference results in anarchy of industry; regulation is but an intermediate stage leading to the ultimate goal of government ownership, for it can not hold in check the great forces of industrial self-interest. Control is only possible with ownership, regulation is futile without control. This is the keynote to the position of the state socialists and government functionists whose objections to the present system have been scheduled in the paragraph

above. To them every effort to regulate and control must fail without ownership. The right to control, to fix rates for services, are regarded as the very essence of ownership. The only solution, then, of the great problems is to establish a great industrial state, using the present political organization as the foundation.

The state socialist proposes to restrict self-interest and to place the welfare of the community above that of the individual. He refuses to believe that such general welfare can be attained by the ordinary methods now in vogue in America and England and therefore charges the state with the social welfare of all of its people. Prince Bismarck voiced this sentiment when he said the state must give heed to the welfare of its weaker members. The state protects its subjects as a matter of course, but accepts in addition the responsibility of securing their rights and helping those who can not help themselves. Means are to be devised by which a greater part of the national income may be diverted to the laborer by increasing productivity, constant employment, and the reduction of inequalities. So desirable a thing is not to be secured by the complete overthrow of the present state, but by retaining the principles of the existing historic state, the institutions of private property, and the family it is hoped to engraft upon them wider functions and social ideals. The government in attaining these objects is not limited by principles, as in the laissez faire or even the regulative state, but is guided entirely by the question of expediency.

The ultimate object of the state socialist is to do everything through the state. Though retaining the present organization of society in so far as the family and private property are concerned, he expects to turn over the great agents of production into the hands of the state. The unearned increment, now going to the landlords, will revert to the state; and the forests, agricultural lands, urban lands, mines, public utilities and means of communication

will be public, not private property. The state in such a society is the greatest factor in the life of a people, it regulates rates, determines prices, employs labor, and provides for the old age of its citizens. It is a paternal power.

By means of these wholesale changes it is expected that there will be a marked improvement in the system of production. Speculation, now so rife, with its accompanying gambling devices for determining ownership of shares, is to be entirely eliminated. There will be a greater participation of wage-earners in the distribution of national income through the medium of larger wages, shorter hours of labor and satisfactory sanitary conditions. Old age, sickness and even incapacity will be provided against by the foresight of the state. This will mean, it is argued, better men capable of producing larger amounts of wealth. The capitalistic system, when not so restricted, after exploiting the wage-earner throws him, when worn out, on the mercy of the community. The state acknowledges the burden under state socialism and proposes to make better men, give them a longer tenure of labor and protect them when weak and incapable after they have done their work. Such a program requires an extension of state and local functions. But the socialist does not hesitate, he is confident that the state will carry the burden placed upon it without great or serious difficulty.* It is proposed that the incomes from monopolies, rents and interest must, at least in part, be turned into the public coffers in order to meet the increased expenditures of the state. This is to be done by taxation and by the government ownership of utilities, and monopolies. Two objects of taxation appear in the program, one to regulate the distribution of income in such ways as to counteract the harshness, inequalities and difficulties of the present distribution of wealth; the other to affect private consumption by making luxurious

* See Wagner, State Socialistic Programme presented in Dawson, Bismarck and State Socialism, p. 156.

and injurious commodities too expensive for the use of the common people, a method that takes the state into a national guardianship over the liquor traffic, tobacco and opium trades. It is in a nutshell a system of state government which, holding the balance of power between classes and parties, uses the state for the accomplishment of great economic and social purposes. In effect it is a system of public management slowly extended over capitalistic production as it becomes incompetent or injurious.

To accomplish the task of giving to its manhood a fairer chance of development the state finds it necessary early in the growth of state socialism to control the agents of production, especially those called natural. To secure the benefit of the unearned increment due to the increase of population and the increased value of wood products the state must own the forests. Large estates menace the welfare of the small landholder and laborer and again the arbitrary powers of the state are brought in play to bring within its control the great landed estates. Similar statements may be made in regard to urban properties whose values are almost entirely created by the presence of large populations. The ownership of these together with the control of mines and fisheries give to individuals an undue power over the materials and food products of a people that the socialistic state refuses to countenance. In many instances the means of communication, railroads, canals, roadways, telegraphs and telephones have been the means of exploiting unduly the people of the state, likewise their owners have, aside from the heavy charge, speculated upon their values to their own profit. In the field of monopolies, natural and artificial, the gain has not been for the people. So the state is looked upon as the power that can modify the evils, so apparent in the individualistic state, that have not departed under competitive forces nor disappeared with the attempts at regulation.

It is, however, but a short distance that any state has

gone in the direction of the extension of its powers or the accomplishment of this program in economic and social fields. Thus far two classes of states have entered the realm of state socialism, one monarchical in its government, the other democratic. The first was guided by political and economic considerations and the other by economic and ethical reasons. In one instance a strong centralized government desired means of communication that were not provided by private capital, in the other a meager population, with scattered resources, hardly justified individual enterprise in building railroads. The state financed and built the means of communication. In the monarchical state the ownership of railroads has been followed by fair administration, in the colonial democracies it was succeeded by serious problems of a political nature, involving administration and the employment of voters. In both cases where the state functions were extended beyond the building of railways and telegraphs for economic and strategic reasons the initiatory force was the people. Monarchical lands hoped to meet the demands of growing social democracy by extending the activities of the state, without modifying either the control or form of the political organization. The democracies looked to government activities for wider employment of the population with shorter hours and higher wages than prevailed in private employment. As in every movement, political or economic, the motives have been a mixture of selfish interests and noble purpose. Still there is behind it all a strong feeling that in the state there will be found an agency that will solve economic problems, relieve distress, equalize incomes and give to men greater equality of opportunity.

To know is the necessity. What have states already accomplished in the field of industry and how far have they been successful? To answer the first part of the query requires an examination of the experiences of those states that have undertaken enterprises under state direction,

and in order to meet the question in its second part a test must be applied to the results of government operation. Are the rates high or low, are the costs of administration excessive or low and the conduct of the industry efficient? In rates and costs are two tests that will meet the needs of this inquiry.

The most important industrial field which the state has entered is found in the ownership and operation of railways. Down to 1870 the motive for undertaking government direction of railways was either that of assistance or political considerations. After that date the purpose changed and control as well as ownership was sought because it was thought the railroads would, or already had, become too powerful. The first railroads were built in England during the years 1825 to 1830. The English, at this time, had plenty of capital and a disposition to use it. There was no need of aid. In the other parts of the empire the Government gave some financial encouragement. On the continent capital was by no means so plenty and such as there was was not offered freely for the establishment of railways. The prospect for a profitable return was less, but the military and political necessity was greater. Some of the more enlightened governments began to build railways. The system adopted was that of building roads of strategic importance and letting private enterprise do the rest. This plan was followed in Germany and Belgium. The French differed in that the Government gave support and assistance but leased the roads and rights of way to private companies. In Australia the Government owned, built, and operated the railroad. The United States adopted a system somewhat akin to that of the French. Grants of land, subsidies in cash by nation, states and municipalities, were given to private companies to build railroads. There were but few instances of state ownership of railroads in the United States, though States actively extended their credit and efforts in the assistance

of public works and of private corporations engaged in making canals, roadways and railroads.

The spirit behind government ownership, particularly in connection with railroad development, has materially changed at times not only as compared with different lands but in the same country. Just a little after the middle of the nineteenth century there was a series of national wars resulting in unity and government centralization; this statement is borne out in the unity of Italy in 1861, the unity of the United States in 1866, German centralization and Austrian unity in 1870. With this growth of national consciousness came an increased patriotic feeling and national centralization. Accompanying it was a transition from free trade to protection and an increased desire on the part of government and people to control the railroads. It had been discovered that these steel highways exerted an enormous influence on trading. It was thought that if the government owned the railroads these difficulties would disappear. A very natural desire was re-enforced by a proposal to strengthen governments and to weaken private companies. Under this movement Prussia and Belgium in particular began to take over private roads and out of them to develop a state system.

"In Prussia," Charles Francis Adams said a quarter of a century ago, "the experiment of exclusive state ownership and management on a large scale is destined to have a full and fair trial under the conditions most favorable to its success. Should it succeed, one solution of the railroad problem will have been reached. Practically it will be a cooperative system, the Government, under imperial forms, being nothing more or less than a trustee managing a vast industrial organization for the general public benefit. The simple question will be, what advantages and abuses of its own will such a system, under all of the circumstances, generate to offset the advantages and abuses of private ownership? Such would seem to be the coming

form of the problem for Germany to solve." Prussia began her system of railroads as early as 1838. The charters then granted gave the Government the right to take over the roads at the end of thirty years by assuming the debt and paying the holders of shares twenty-five times the average dividend prevailing during the five years prior to purchase. By 1874 the State had paid a million and three-quarters of dollars in subventions and was by no means in control of her railways.

The situation in the Empire a year later was that of a mixed system, including imperial railways, state railways, private lines, private lines managed by the State, State lines managed by private corporations and lines leased by the Empire. There were ninety imperial managements and 1,357 different tariffs. Everywhere there was evident a woeful lack of plan and system. The attempt on the part of Prussia to turn over her railroads to the Empire was unsuccessful and immediately after this failure of the imperial scheme she began to take up the task of thoroughly establishing a system of state railways. Of the 32,000 miles of railroad in Germany over 30,000 miles are owned or managed by the State. In Prussia there are 18,642 miles under the direction of the Government, which have, from the point of view of income at least, been successfully operated. The German economist, Gustav Cohn, says in an extended article that: "Each year the railways not only paid in full the interest on the railroad debt and on the entire state debt, but in addition they yielded a very substantial surplus, which in the fiscal year from April 1–March 31, 1890, reached the maximum amount of 145,000,000 marks. Since then this surplus has, it is true, diminished, but it still amounted for the last year (1891–92) to about 90,000,000 marks. Moreover, in accordance with the law of March 27, 1882, more than 550,000,000 marks of railway debt have been extinguished. Although one might justly feel satisfied

if the railways paid the interest on their own capital, expectations were so raised by the abundance of the surplus that the demand was now not merely for a surplus, but for a great surplus, constantly increasing with the constant increase in the needs of the general administration of the state." *

Successful as Prussia has been, and the same may be said of the other German States like Baden, Bavaria, and Würtemburg, the story of the Australian experiences has been the reverse. The very conditions of territory and economic organization were a bar to the development of any railroad system public or private. The burden was increased by the policy, constantly adhered to, of building in advance of the population. The ease with which money was secured was a temptation to do just that thing. In Victoria the guarantee of interest was not sufficient to attract capital, and the colony finally decided upon government construction. In order to do this money was borrowed and the debt in four years, 1858–62, reached the large sum of $38,000,000. The mileage of road was but 214, making the average cost $130,000 per mile. In the next eight years four millions more were spent in adding sixty miles. To-day Victoria has nearly 3,200 miles of railroad at a cost of about $195,000,000. In the other Australian States the governments have built and managed the roads. The principle followed in the extension of lines has been the sectional one of allowing mileage to different parts of the territory, which was politically a popular method of determining the need for transportation facilities, but likely to result, economically speaking, to the disadvantage of the producing and commercial classes. However, building and operation have continued until to-day the Australian States own 14,500 miles of railroad and do a business amounting to $48,715,000.

Although England practised at home the strictest indi-

* Journal of Political Economy, vol. i, p. 179.

vidualism in the building of her railroads, in the colonies her representatives under the failure of private capital to supply transportation facilities resorted to government action, as is already seen in Australia and is also to be seen in India and New Zealand. In the first-named colonies the whole burden was shifted to the Government, in the second a dual system was practised. There "the whole history of railways is one long and unsuccessful attempt to get railroads constructed without a state guarantee." * But capital was not forthcoming until the rate of interest was assured by the Indian Government. In the form of rate and expenditure limitations the Government sought to hold the private roads to a comparatively high standard of operation, but the guaranteed roads were practically failures. The dual control led to friction and delay that was intensified by the division of authority between the home and Indian governments. Says a recent writer: "In 1869 the system of guarantee lines was abandoned, and the new lines up to 1881–82 were state lines. Then another turn of the wheel took place. Indeed, the system of administration seems to vary with the change of ministers, the exigencies or accidents of party government, as evil in India as it has been in the Australian colonies." Nevertheless, the Public Works Department of India worked upwards of 5,125 miles of railway and the Indian Government owns outright 18,566 miles of railroad acquired through purchase and construction. In the statement of government ownership should be included the figures for the roads owned and operated by the native States, which amounted in 1901 to 3,048 miles.

In New Zealand the State owns and operates 2,212 miles of railroad, which yielded a revenue of $5,639,235. The figures for Australia are already fresh in mind. They are but meager figures when measured by the many railroads in the United States whose gross earnings are more

* Col. Conway Gordon, Director-General of Indian Railroads.

than $5,000,000,000. Twenty-four roads in that country have incomes of between $10,000,000 and $40,000,000 and fourteen of more than forty millions each; the joint incomes of four railroads are greater than the gross receipts of the entire Prussian system and the returns of nine companies exceed the gross receipts of all the railroads in Germany.

Government ownership has been carried into other fields, such as mining, forestry and telegraph and cable operation. The success in the conduct of the last has been remarkable, for ease of operation and routine of management have made it possible for governments to systematize the business and to carry it on with the work of the postal system. In every civilized country of the world, with the two exceptions of the United States and Cuba, this has been done. On the Continent the governments owned the telegraph lines from the beginning, in England they were purchased by the Government in 1869. Efficient service and low rates have been the results of government operation, though it is agreed that international rates are higher, and the density of population makes it possible to secure lower rates than could prevail in this country even though the Government did own the telegraph lines.

The lesson which Europe teaches, says a writer in the Railway Age, is that any thorough-going and effective effort to regulate rates will arrest the decline of railway rates, and prevent the development of large volumes of traffic. It likewise brings into politics a serious problem bound up in the contention of rival manufacturing and producing centers. Australia's contribution to the experiment is the failure of a democracy to manifest that politics can become business.* If these results prove to be results,

* Series of Articles in the Railway Age, by H. R. Meyer, beginning with the number of July 10, 1903, to which I am indebted for many statements appearing in this and following pages.

then are the contentions of the expansionist of state functions and of the state socialist resting on an insecure basis, for lower rates and better management are the principal arguments for state operation of the means of communication.

The science of rate-making has never gone beyond the principle of charging what the tariff will bear. This has become fundamental in their determination, but the conflict of sectional interests in Europe has prevented the making of rates based upon this principle. The tariffs of the German roads have eliminated, almost entirely, the discrimination between the large and small shipper. The results of this position are seen in the inability of the European roads to help producers in their efforts to meet falling prices. The crying evil in America is discrimination, but the roads of that country have materially helped the producer by lowering rates to meet changed conditions. In America the cost of carriage has steadily fallen, in Germany it has for fifteen years remained as constantly at the same figures.

In the face of the rapid growth of Germany's world trade there has been almost no reduction in railroad rates during the eighteen years previous to 1900, on the other hand the charges of freight carriage on the waterways have been cut in two. The Government began canal-building to aid the world trade movement; but having once created the canals, which disturbed the whole railroad rate system, it refused to change the rates in order to equalize the economic results. It was only upon legislative pressure that alterations were finally made. Here was manifested the tendency everywhere seen in government ownership to take the railway question into politics.

In respect to improvements the railroads of Germany are the same as those of 1875. To raise the roads to modern efficiency would not only require a change in the types of cars and locomotives, but would necessitate dis-

criminations of work in various sections of the country. It perhaps is not altogether an unreasonable conclusion that the Germans use the canals because they can not get the modern railroad. At any rate every real improvement of railroad service has been made on privately owned railroads. The development of the track and early locomotive was made in England, the longitudinal system of car-construction was worked out in America, the block-signal system was first used in England, telegraphic communication of train orders originated in the United States, air-brakes are a product of America, the interlocking switches and signals came from England, track improvements began with England, equipment and huge locomotives in America. Under government ownership the managing talent has not struck out into new lines as it is compelled to do under the rough-and-ready tests of competition. The results just presented are manifested again in the failure of the Australian roads to maintain their equipment at its highest efficiency. Money used for such purposes is begrudged by the legislatures and the surpluses are voted for other purposes.

In Prussia the success of making a surplus has come to be a demand for a great surplus that shall increase with the growing need of the State. In that country it was generally understood in 1879 that the surplus earnings should not be used to defray the general expenses of the State, but as a reserve fund in case of emergency. The increasing socialistic tendencies of the State have materially increased the expenses and compelled the ministers of finance to look for new sources of revenue. Management of the railroads under this pressure has been on the basis of the budget and not in the interest of trade and commerce. The increase in income from the operation of the railroads has been due to the growth of Germany and not to the action of the management.

The application of the rate-test to the tariffs of the

state railroads brings out clearly the fact that the cost of carrying freight in Germany and Australia is much higher than in England and the United States. Back of the rates that are made on the state roads is a good deal of political history worthy of reference. The arrangement of rates is never made without political influences brought to bear by the representatives of specific districts in the legislatures. Compromise thus becomes the basis of the rate-making. Nor is this the limit of the political influences. The purchase of equipment and maintenance of standards are rendered difficult when money is refused by a legislature, and finally the expectations of voters in reference to the paying power of a road materially affected the management and the methods of accounting. The evidence points strongly to failure in rate-making by a state railroad system.

Prussia, however, may be said to have pretty well solved the problems of administration outside the making of rates. Even this feature of government ownership may be modified by the general councils of officers and shippers now held in Germany three or four times a year. Complete understanding between the managers of the roads and the shippers will in time alter the stiffness of the present system. What may be accomplished under a monarchy by a centralized government is a markedly different thing from the results likely to come from a government under a democracy. Australia stands as an example of democratic administration. The Governments are by no means so free from political influences as those of Germany and do not offer such excellent results. But on the other hand the experience of Australia would be nearer what might be expected in England or America, were the state system introduced, rather than that of the German States.

The administration of the Australian railroads is pretty well typified by a statement of Sir George Turner to the effect that no man of the class (naming a number of high-grade managers) would leave England to enter the services

of an Australian colony. The parliaments have insisted upon the retention of staffs created under the political managements of former administrations and have interfered with the transactions of the railroad departments for political reasons. The railroads are starved because of the heavy demands upon the public treasury for other purposes, the result is poorly equipped roads carrying small train-loads at high cost per ton mile. Expenses are not always paid out of current income and resort is had to borrowing that materially increases the public debt. Demands of all kinds are made by every class from every section and these are of such a nature that they preclude anything like management on the long-sighted principle; the roads are run for the present and not with the future in view. The errors of judgment are not written off as in the case of a private company but are laid upon the taxpayer, whose very industry is burdened by a condition over which he has no control. The results in Australia may be summed up in three brief statements: (1) Systematic borrowing until the State debt is beyond any reasonable limit; (2) dependence upon the State for employment without reference to the product; (3) reliance upon government borrowing for continuance of prosperity. These in addition to high rates and inefficient management complete the record of the Australian systems of state railroads.

The arguments for state activity in industrial fields are the correction of abuses, elimination of corruption from politics, greater care of human life and the lowered cost of operation. The abuses corrected are followed by others of a different nature, corruption is not eliminated, but if possible increased, and transportation, the essential thing, is not conducted at lower rates. It is replied that a great bureaucracy is created, an appalling national debt piled up, management made inefficient, wasteful and unprogressive. The problem is greater than is suggested by either group of arguments. It is a problem that depends upon

the temperament of a people, their government and economic conditions. It is therefore impossible to say "a priori" that a government shall own and operate its great industries. Each state must determine what things it can do best. The day of laissez faire has passed and regulation or ownership will be the method of conducting industry. Experience in trusting elaborate industrial functions to a democracy is not large, and where tried not convincing in its results. A nation must first have the necessary civic capacity before it can successfully cope with the great industrial problems, and even then the union of economy and enterprise is not assured. In the control, even of the ownership of monopolies, the state has a field of action to which it may well confine its efforts.

CHAPTER V

CONCLUSION

At the opening of the twentieth century production had reached enormous proportions: in every civilized land was heard the hum of cotton-mills, railroads and telegraph provided adequate and quick means of transportation and communication, organization of capital and labor was carried to unheard of proportions, markets were world-wide and products enormous in quantity. To reach this position in industrial organization the world had cast aside the stage-coach for the railway train, accepted the gigantic steamer in lieu of the wooden sailing vessel, discovered the process of making Bessemer steel, invented the sewing machine and a dozen devices of equal importance, created a factory system, seized upon and colonized foreign lands, accumulated savings and capital, formed gigantic corporations and with it all produced a great number of difficult problems that were to press harder and harder for a solution.

The nations selected are representative of that growth, and also of three distinct phases of national development. England was the oldest of these, for her industry and national organization had taken root long before it had done so in the other lands. With iron in her possession she was able to put the early inventions into material form and under the protection of the Napoleonic wars to establish her factory system upon a firm foundation

in the development of a wider commerce by the existence of medieval legislation she cast it aside and altered, wherever needful, her institutions to the demands of a growing national organization. In the highways of the seas this nation established colonies and brought under one sphere of influence the peoples of many lands and climes, and having done this sold them the products of her looms, forges and factories. At the time of the industrial revolution her political machinery was clogged with an arbitrary ruler, a rotten borough system and some corruption. This she has changed by establishing her ablest men in the seat of government, by readjusting political rights and extending the suffrage, by maintaining a close relation between her people and Parliament, and by requiring a quick response of the Government to the wants of the people. She has passed from an aristocracy to an oligarchy, safeguarded by a democracy, from a domestic system of manufactures to the factory system, from partnership organization to corporation and combination, and finally from a laissez faire conception of government to one of regulation.

To America the representatives of many nationalities came seeking the free lands and the equal opportunity of a new country. The basis of American growth has been free land, and the movement of the successive waves of human life seeking these opportunities afforded by nature, has created a democracy dominated by an intense individualism. When by their own efforts the people were unable to create a roadway, a canal, or railroad they called upon the state to undertake the task, but in most cases private companies did the work, although when these companies were able through political influence, they secured the financial aid of the state. So the American Commonwealths never occupied the prominent place of the German state nor entered the regulation of industry to the degree that England has done in the development of her organiza-

tion. American industrial growth in the first hundred years was not sudden; no revolution disturbed her development; she passed gradually from the domestic system to the factory, and somewhat more rapidly to the use of the canal and railroad. This was true up to the Civil War, possibly 1873, but after that date progress was rapid, machinery was used wherever possible, capital enlarged, organization carried to its highest efficiency, output enormously increased, free lands rapidly absorbed and resources monopolized under the land laws. In the indifference of individuals to the general welfare legislation has been framed and administered for individual and sectional benefit. A plutocracy has gradually unfolded itself with its baneful influence on law; misrule, political corruption and irresponsibility have grown with the complicated organism. The United States is a land of great resources, of democracy, of party government, of commercial development and of serious problems aggravated by the inadequacy of the governing forces.

The German Empire was the result of a series of political and economic events. For the first few years her energies were devoted to the organization of a centralized governing machine which was successfully developed. Her industry was in many forms; some of her factories were highly organized, others still adhered to the methods of an older régime; her agriculture for the most part was carried on by small farmers and her transportation facilities controlled by many states and companies. To-day, by careful and consistent legislation on the part of the Government and by the use of scientific and modern methods on the part of her manufacturers and merchants, she has created a great industrial organization. But most noticeable in it all is the law and order, the subordination of the merely commercial element and the domination of systematic and thorough government. Thus, there appear in the three lands a system of regulation, one of interference and a

other of government control. Each has been developed under different circumstances, but the application of the successful system in one land to the problems in the others is prevented by the conditions existing in the different countries. To put it in other words, the experiment can not be separated from the form of government or the industrial conditions prevailing at the time of its trial. Nevertheless, there are some general conclusions that may be reached in the experiences of the three countries considered in Part One. The presentation of these is postponed until the latter part of the chapter.

Industry is complicated. This is the theme of Part Two, in which are considered the extractive industries, transportation, manufacturing, forms of organization and commercial institutions. The basis of all wealth must be the application of labor to the earth; when labor is supplemented by capital the exploitation of the earth goes on more scientifically and more successfully, agriculture alters its form and is adjusted to the changing conditions, forest management appears as a science and mining becomes efficient and thorough.

The extractive industries, and consequently all industries, are affected by the law of diminishing returns. Man is compelled on this account to exert greater skill, develop better systems of transportation and more efficient methods of manufacture. What he has done in this direction is to be seen in the three great countries of the book. Agriculture on a large scale, the "cattle-raising" method of using the soil, the organization of factory and foundry in England, Germany and the United States, the modern railroad systems, standardization of machinery, concentration and specialization of industry, have been introduced and established in all these lands to increase the efficiency of capital and labor. The demand for more capital and a better organization of it has been met by the corporation, combination and great cooperation, and the need for exchange

facilities by the bank, clearing-house, speculator and the mercantile agency. The whole forms an industrial system complex but automatic. Its operations do not rest upon government action, though protected and guarded in all of its parts by the agency of the state, but depend upon the forces and powers at work in the organization itself.

The growth of the industrial organization in the advanced commercial nations is truly marvelous. This development has been accompanied through the numerous changes, alterations and adjustments, by a number of serious and difficult problems which have been met in Germany by adequate legal restrictions and political devices; in Great Britain by early recognition of the problems involved in the industrial progress of the nation; and in America by a tardy acceptance of the difficulties after the industrial organization had outgrown, in at least some particulars, the political organization.

It is at this point that the third part is opened for the consideration of the problems that come to view in the brief history of the three nations and the short description of industry. Government and industry are thus brought into contact. What attitude shall the state take in its relation to the problems thus arising? How far shall it go in an honest endeavor to solve the difficulties? The answer is not positive; it can at best be conditional upon the character of the government and the stage of industry. To such reply as can be made the remaining pages proceed.

These problems are the outcome of organization and not of nature. Nature provides the soil and the resources for the use of men, but almost at once in the formation of the crudest and most primitive groups warfare and conflict ensue in the struggle over the control of the feeding-place and the division of food. The most advanced form of the struggle is seen in the efforts of nations to control neutral markets, colonize new lands and produce on a national

basis. These efforts require capital in large amounts and organized on a gigantic scale, but they also involve the aggregation of masses of men in cities and centers of industry.

Inside of the national group every exertion is made to secure wealth, power and honor. The system of private property creates a capitalistic class which by its very existence presupposes another body of free wage-workers. In time the two groups become socially separated, but are brought together in acts of production by freedom of contract and the wages system to be again separated as the owners of the means of production and of the personal elements in production. This cleavage between the two groups means sooner or later a distinct social movement through which an effort is made to overturn the existing social order to suit the interests of the propertyless class. But the recognition of the specific problems arising under the present form of production within the existing order may forestall, perhaps actually modify, the movement against it.

In the main, the basis of the present social order is undoubtedly found in private property and the freedom of contract. In its development private property has been greatly modified and it has not yet reached its final form. With this growth of property rights has come an increase in the mass of what the economists call free goods. These are found in an enlarged body of knowledge, expired patents, parks, forest lands, and enjoyments provided the people by municipalities and national governments. In addition to this enlargement of public enjoyments there is the feeling, a more and more intense one, that private property is a social trust to be administered carefully and wisely with some regard to the community in which its possessor lives. The law, too, has attempted to restrict incomes due to monopoly profits and by proper classification to provide for the regulation of inheritances, expect-

ing through these methods to change the distribution of wealth and consequently to open the opportunities now held by a few to a much larger group. Every generation sees a marked change in the movement and ownership of property. The state by an easy and natural method can exert a great influence upon wealth distribution by establishing wisely framed inheritance laws. This in itself is sufficient to indicate that the time for a social revolution has not yet been reached, for it is possible to materially modify the present system without destroying its best elements.

Freedom of contract, in the laissez faire sense, may lead to many abuses, but even under that theory of government the common law takes it for granted that the persons contracting shall not be coerced. It has been clearly demonstrated that free unregulated contract results in a degrading dependence of some upon others. Professor Ely says in his presidential address before the American Economic Association: "The coercion of economic forces is largely due to the unequal strength of those who make a contract, for back of contract lies inequality in strength of those who form the contract. Contract does not change existing inequalities and forces, but is simply the medium through which they find expression. Wealth and poverty, plenty and hunger, nakedness and warm clothing, ignorance and learning, face each other in contract, and find expression through contract." The problem lies deeper than the contract or its form; it rests upon the forces making for inequality.

The presence of a democracy in a state complicates the problem, particularly if that state has no restricting monarchical system. In its early history a popular sovereignty may be one in which the citizens are on an equal material basis and the distinctions between men largely of an official nature. In time the satisfaction of material wants becomes the dominant aspiration and wealth the means

which power is secured. Power and wealth, then, are synonymous, religion loses its hold on men, the sentiment of loyalty so manifestly strong in a monarchy declines and selfishness becomes the rule of life as well as the motive for participations in the activities of government. Men come to confuse personal ends with those of the state, regarding the government of the latter as a means to secure their purpose. There is then brought into the political life a mercenary spirit that is exceedingly demoralizing to the morale of citizenship. Public welfare is overlooked and important problems are constantly met by restrictions and difficulties. The modification of the disturbing elements—private property and freedom of contract—depends upon the democracy; but if the democracy is a mercenary one, demoralized by the political methods of corporations and railroad companies, there is little hope for the alteration of property rights by inheritance laws and adequate taxation, and as a consequence a social movement, directed by a class spirit and a definite code of action, appears as a distinct factor in the life of the state. That social movement is based upon three elements; first, an existing order of society resting in the main upon the methods of production and distribution of the material goods necessary to human existence. Second, a class which is discontented with the existing conditions, and third, an ideal which the discontented hold up and express in programs and demands. All of these elements are present in modern states. The movement forward from the simplicity of the agricultural stage is marked by greater inequalities of material conditions and a hardening of class lines. It is evident that a forestalling of these difficulties must be met by wider activity on the part of the state, and a reasonable change in existing institutions and methods of production and distribution, in order to withstand and prevent anything like a hasty and ill-considered social movement.

The problem centers about the phrase "Equality of

Opportunity." The desire bound up in it expresses itself in the demand for social reforms that shall give a new freedom for race development. "We want," says Mr. Webb, "to bring about the condition in which every member of society shall have a fair chance to use and develop the gifts with which he happens to be born." A few influences are now at work in this direction: these are public education, sanitary laws and their administration, the building of better tenements, the shortening of hours of labor, the prevention of child labor, establishment of banks, charity organizations and philanthropic enterprises. But they are inadequate to withstand the great industrial forces constantly making for inequality. There can be no denying that land and property ownership, whatever the economic grounds of their defense, develop influences working toward inequality in production and distribution. Their tendency is constantly in the direction of inequality of income, and that in turn works toward inequality of opportunity and production. One follows the other. Interest and rent go as income from the product to a distinct class, which reduces very materially the share of the worker, and even this share may not increase proportionally with the growth of the product on account of monopoly features of ownership.

To-day the free lands of the United States are taken up and settlers are paying railway companies for acreage. This statement of fact is really the evidence of the closing of a remarkable economic period: that of free land and opportunity in the United States. With this unique feature of economic growth eliminated, the situation in the United States corresponds more and more with that existing in Europe, where hard and fast lines exist between grades of workers. Products, as now determined by the forces of demand, have gone beyond the power of home consumers to use and are disposed of in the friendlier markets of foreign peoples. A limit to commercial expe

sion of this kind exists in the power of neutral markets to expand and the probability of adding to national territory. In time, demand, through the hardening of class distinctions and the restrictions just referred to, comes to be more and more stable. The incentive to the use of inventions and the extension of commerce are not great enough to break over a routine of production in which the requirements for machinery, raw materials and labor remain nearly the same.

Under the present system and its possible results the future of the worker does not seem to be secured. Economic forces work against the indefinite extension of markets and continued change in methods of production; institutions, on the other hand, of property and organization separate classes, and, with the rapid expansion of population, tend to harden the lines between them. Under these conditions the discontent of the laborer continues, not only in one land, but wherever he is associated with machine production.

With the filling of countries with people by immigration commerce and invention are restricted, because there are then new regions to open up, and an outlet for the ambitious and discontented must be found in some other way than this traditional one, so long practised in commercial lands. The method of satisfying discontents has been to extend the suffrage to larger and larger numbers of workers and also to grant more extended privileges through the enlarged functions of the government. In a democratic state the tendency is toward wider suffrage, even to universal suffrage, because the ruling class find it difficult to carry their policies without a greater voting power, but the masses have begun to reflect that this power of the ballot can be used for their own well-being, through the control of the governing machinery of the state. The use of such a power is, however, fraught with a great danger, a danger always inherent in a democracy, but in this case em-

phasized by the wider activities of the state. That danger is the possible loss of individual liberty and the dominance of incapable and demagogic leaders. To these are but two possible offsets in a state not yet socialistic. These are the maintenance of civil liberty and the submission of the people to rational guidance.

This is, however, a question of ultimate control. There are immediate problems that press for some kind of a solution which are really more important at present than the greater, but more distant questions, which relate to the abolishment of property and wages as distinct features of a social system. The present methods of production and distribution are marred by a number of things, such as excessive loss of life, too great power of corporate bodies, monopoly, and inadequate compensation for services rendered. The story of production is filled with incidents of deaths, injuries and disease on account of disabled machinery, poorly guarded gears and belts, unsanitary and inhuman conditions of manufacturing. Thousands and thousands of men and women give up their lives every year in order that goods may be produced under misconceived notions of cheapness.

The figures are more or less familiar to every one, but the state has been slow to act. Here is a distinct duty to perform, for under the present condition the burden ultimately falls upon the state in the care of paupers and criminals created through the loss of bread-winners, or the lowering of efficiency by sickness and disease. Factory acts have been passed in large number, but the requirements for safety and freedom from disease have by no means been met. Inspection of premises is not well done and even when done is not frequent enough to check the real abuses. More legislation and a greater exercise of police power are all that is required to change what is a real menace into a minor part of the problem.

In every civilized country there has been a ma

increase in the number and size of industrial corporations. As has been pointed out in past pages many of these, the majority in fact, were created with excessive capitalization for speculative purposes. There is a large reserve power still remaining to the Government in the regulation of the corporation, especially in the case of railroads. This power rests upon something wider than the monopolistic nature of the services rendered by them; it is in fact imbedded in the law, for corporations are creatures of the law and can in consequence of the privileges granted by the state be subjected to special responsibilities. There is no reason why directors should not be held accountable for service rendered by the corporation, and investments made in the shares of the company. The promoter should not escape; he too should be required to make good the inducements held forth by him to encourage people to invest in his enterprise and the small stockholder should be protected. When it comes to monopoly the problem is equally definite. The state has the power to tax and to regulate. The enforcement of wise laws resisting monopoly is the essential element in the change of conditions, for without that weapon trusts have little power to raise prices beyond their natural limit.

The wage-earners, and particularly those following the socialistic parties, complain constantly of too low wages and a small share of the product created. Here is a problem as important as those of corporation and monopoly. The option offered is some form of the wages system (which must always exist under a capitalistic form of society) or the complete elimination of the wages system and the introduction of a form of share which shall depend upon abilities or needs. If the present society is to continue the wages system will be a part of it, but by introducing profit sharing, gain sharing or collective bargaining, it is possible to so modify it as to render greater justice in the division of the product. Whatever may be

said of these methods of determining wage contracts, they give to the wage-earner an incentive and a larger share of the product. The development of employing and trade-union groups has placed special emphasis upon the collective bargaining method of determining wages. For its final outcome there must be an increased responsibility on the part of the bargaining groups in their relation not only to each other, but to the public. With monopoly power limited and restricted by law the wage-earner ought to secure that portion of the product which is due to the increased skill of the worker, because of his power in the group organization to modify the old wage contract. In times of depression, however, the large capital organization can dictate terms of employment, but the possibility of modifying the wages system and the hope of actually doing so will retain many men in the ranks of the conservatives long after the more radical have given up the hope of anything better under a capitalistic régime. The continuance of the present system depends upon private property, private capital, labor and the wages system. The breakdown of any one of these materially affects it, in fact so much so that every effort should be made to modify them so as to make the worker satisfied with his share.

The solution of such difficulties as are presented in the immediate problems referred to in the last paragraphs requires some attitude on the part of the state. The individualist believes in the minimum of state interference, justifying it, when necessary, on the grounds of forcing equal conditions: namely, of giving economic principles an opportunity to act without restrictions, moral, ethical or political. He believes that a wide suffrage will place the government in the hands of the emotional rather than the intellectual. He therefore looks to a limited suffrage, an increased responsibility of officials as necessary for a betterment of present

view he has much to justify him, but the regulationist says we must have systematic legislation, for the institutions of government and industry are not well enough formed to give the service and freedom from abuse that a people have the right to expect. Consequently this group of advocates present certain legislation of a curative and preventive kind which they expect shall be enforced and carried out by the officers of the state. They also present a third requirement, the elimination of political fraud from the conduct of government. Each and all of these are based upon the notion of a wider interest in the state and its functions on the part of the people, and further upon the idea, constantly becoming clearer, that the state is a means to an end. Still, the advocates of socialism, various as they are, regard the state as a final form of social organization; but in justice it should be repeated that the form and functions are materially different from those now devolving upon the state.

The socialist group may be divided into those who advocate a sporadic socialism, bi-socialism and universal socialism. The first are mere extenders of government functions into the realm of government ownership; in no sense do they alter the foundations of the present society, but the bi-socialists believe that land and all monopolies should be owned, or heavily taxed to the point of forcing ownership on the part of the government. The universal socialists do not think the extension of state functions or the elimination of private property from the industrial organization is sufficient. The whole industrial order must be in the possession of the people, operated and owned by them, and the products shared among them without the toll-levying process now in vogue in the industrial society. These are the possible attitudes of the state toward the problems, that of individualism content in the main with the existing conditions, regulation by legislation and real enforcement of the law, or socialism, in which the founda-

tions of the present society are greatly modified or entirely cast aside for another form.

In the main the problems have fallen, so far as their evil effects are concerned, upon the wage-earners, though here and there are small producers and merchants who, because of a trust organization or the high wages and exactions of trade-unions, have lost their places in the business and trade of the community. Nevertheless, whatever the difficulties or whatever the class upon whom the burden may have fallen, the fact is that the form of organization is largely to blame for the serious complications now so clearly seen. Industry on its mechanical side has developed faster than its administration and management, monopoly has grown much more rapidly than the powers and organization of the state, and the same may be said of private property, railroads and the other institutions engaged in producing and distributing commodities. The control of these factors is, in the United States and England, where male suffrage exists, in the hands of the class suffering from the evils. This is, however, but a nominal control, for the actual solution of the problems involved can be attained only under rational guidance, even though the management and direction of the government may be in possession of the wage-earner, for the difficulties will appear in but another and more aggravated form if not met in a scientific and non-partisan way. And if the solution carries the state into socialism individual liberty is materially jeopardized by what must ultimately be an oligarchy of power. More and more the situation clears and it is seen that a radical departure from fundamental principles is impossible, the solution must be attained by working out from the existing conditions and modifying them.

In America the situation is tenser and the problems more difficult than in other lands. There the development has been a rapid one; great freedom of action was

in the settlement of a pioneer country and the law was by no means a powerful force in maintaining order. Attention was given to material development, and in a short time state and municipal organizations had been outgrown, just as the management of industry has been surpassed by its technical growth. This was a serious defect, emphasized by the failure of the courts to adjust such legal institutions as did exist to the growing economic order and the inelasticity of constitutions and governments. The result is what might have been expected, an overwhelming organization of industry standing side by side with a state that is puny when compared with it. Awakening to the situation the state has attempted to enlarge its powers, but has been restricted by the inelastic American legal institutions. So the problem becomes a double one of political development and industrial control.

Great Britain has no written constitution and on account of that fact her institutions possess great elasticity, for each judicial decision, each parliamentary act, may change her constitution to suit the real needs of the hour. It must not be thought that England has on this account no problem; she is as an actual fact brought face to face with difficult questions which are, however, almost wholly economic, involving the comparatively simple questions of trades-unions and corporate control and the more difficult matters of wealth distribution. She has no problem of state power and government jurisdiction. The same is still truer of Germany, where the state organization and legal institutions are well abreast of the industrial development. Her economic problems are not complicated by the presence of a weak state nor by an organization fundamentally as strong as the state itself. Because of the hardened class lines and the restrictions of opportunity a formidable class movement has come into existence in Germany, but it is even now being modified by an extension of privileges and an enlargement of government functions that should

make for a considerable betterment of wealth distribution.

Nor is it possible from the so-called practical viewpoint to meet the difficulties of democratic control by restricting the suffrage of male voters. Such an act on the part of the state would increase the discontent and precipitate a revolution because of the reversion of what might be termed a right. Moreover, the restriction of the suffrage does not touch the real problem of inequality of opportunity but makes it more manifest. The tendency is quite in the contrary direction; namely, that of extending rather than restricting the suffrage. Members of the state ask for a system of government that will meet the problems, immediate and future, with some certainty of success. Restriction of the suffrage still leaves the problem with but the added advantage of a more intelligent voting body, but who under the notion of occasional government interference would exert but little influence on the actual difficulties. It is certainly clear that state action must be resorted to in order to avoid the waste of human life, wealth, capital and energy now going on in modern society. The struggle between individuals and groups of individuals must mean the continuance of waste and unless checked must result in the evil consequences already pointed out; however, it will not be forgotten that any action on the part of the state will affect the freedom and liberty of the individual just as the absence of such action will be sure to breed anarchy. On the other hand the conduct of industry by universal suffrage brings a socialism in which the rule is given over to the emotional rather than the intellectual and introduces a makeshift machinery of society sure to act hastily and ineffectively when dealing with such a vast undertaking as the management of a modern society.

Whatever may be said of the present system it has the great advantage of automatic action. It is furthermore a system that may be materially modified and bettered

without destroying the work of centuries. Nor has the success and magnitude of state activities been of such a nature as to argue overwhelmingly for a complete reversal of that system. The state can not do everything; it is not, in fact, argued by anybody that it should do everything, but it can not even do well some things, for some must be left to individuals and some to the state to do. That there are things now done by individuals ineffectively and wastefully is fully recognized, but through the action of the state those individuals can be forced to do their part satisfactorily and well with less risk and cost to the taxpayer and greater benefit to the general welfare.

It is well to understand that individuals can not permanently assume the burden of progress now thrown upon them in the use of machinery, change of organization form and the growth of wealth. The state must protect the displaced and protect itself against the exploitation of its citizens whether in the employment of labor or the sale of commodities. Nor in this connection should it be overlooked that in any progressive society there will always be some derangement which the state can not under any circumstance altogether correct. Still, even if it can only modify, the necessity of effort exists and should be made. But it is not possible to declare in advance that the state shall in its attitude on these questions follow the doctrine of interference, regulation or ownership. Some things the state should let entirely alone, others it should control and regulate and others actually conduct. The purpose of the state is to develop social unity, and especially is this true when the competition of nations with each other is considered. It is national unity and national solidarity that count in the contest. To secure such unity is the problem; the history of the different lands and the complications of industry show that it can not be attained in the same way or by the same government action. In England a better industrial organization is needed; in America a more

efficient political organization and the subordination of the industrial to it; and in Germany a more widely developed industrial organization and larger political and social functions for the people. Each land has its own problem, and in so far as the conditions are the same light may be thrown upon it by the experience of others. In the United States it is clearly demonstrated that we must have stronger political institutions, a sense of duty, and a more enlightened public opinion before we can talk about the enlargement of duties and functions of the state in the management and conduct of industry.

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